VEGETATION INHABITING THE LOWER GRANITE RESERVOIR BASIN

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By

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Abstract

A taxonomic evaluation of the vegetation inhabiting the predicted pool area of the Lower Granite Dam was the main objective of this study. Each species was collected, identified, mounted, labeled, and constituted part of a herbarium collection of 440 specimens. An abundance and presence rating were assigned to each plant species and then a comparison of the vegetation collected on different sides of the river was made.

Sample stations were located, on both sides of the river, one mile (1.6 km.) apart from the damsite to Dry Gulch Island, 28 miles (44.8 km.) upriver. Collecting at each station encompassed approximately a 1/8 mile (200 m.) radius from the riverbank to the elevation of the re-established railroad tracks.

It was found that vegetation inhabiting the basin area consisted mostly of common roadside weeds, cultivated crops, and ornamental plants. Over half of the plant species collected were found on both sides of the river; however, abundance and presence ratings varied when the vegetation identified on each side was compared.

Of the 236 plant species collected, 67 species inhabited the north side only, 45 were found only on the south side and 124 species were found on both sides of the river. Of the total species collected, 96 (40.68%) were classified as weeds in botanical manuals and floras. It was also established that the vegetation inhabiting the north side did differ somewhat from that which was found on the south side, but there was not the marked diversity that casual observation might indicate.

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Preliminaries

The ecological effects to be created by the water impoundment behind the Lower Granite Dam are of great interest and concern to the general public and scientists, especially ecologists, environmentalists, and engineers. The vegetative characteristics of this area have been greatly altered over the years by man's activities such as farming, ranching, transportation, and recreation. A study of these changes and a survey of the vegetation which exists now, prior to water impoundment may be of importance in establishing the ecological effects and hopefully of solving certain environmental problems.

The preparations for this study began with a general aerial survey of the ground vegetation. Dr. William H. Funk and I flew over the reservoir basin from Pullman, Washington, to Lewiston, Idaho, and back. County roads, landmarks, railroad stations, and areas best surveyed by boat were observed and recorded.

Soil maps and legends of the different soil types for the area were requested and received from the U. S. Department of Agriculture Soil Conservation Service.

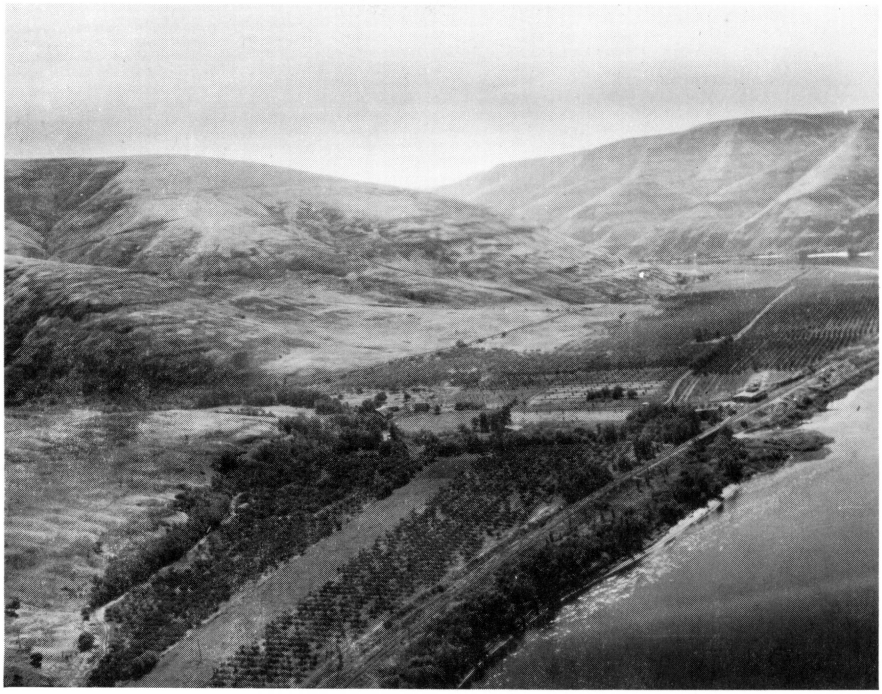
General design memorandum for the dam and reservoir basin, topographic maps of the Snake River Canyon, navigation charts, and township maps were received from the United States Army Corps of Engineers. Plans were made for the use of their truck, boat, and other assistance in collecting and photographing the sample stations.

A visit was made with Dr. Marion Ownbey, curator of the Washington State University Herbarium. He informed me of the various types of vegetation which I might encounter and estimated that approximately 250 plant

species could be collected in this predicted pool area of the Snake River Canyon. Permission to use the facilities of the herbarium was granted, and Dr. Ownbey also offered assistance in the identification and preparation of the preserved herbarium specimens.

Verlan Cochran, U. S. Department of Agriculture, supplied boat transportation to view the few areas inaccessible by automobile, and his personal knowledge of the area.

The investigation included the north and south sides of the Snake River from the damsite to a large sand bar, Dry Gulch Island, located near Lewiston, Idaho, Sec. 19, T. 11 N., R. 46 E.; it encompassed approximately 28 river miles (44.8 km.).



Aerial view of orchards at Wawawai. Photograph taken September 22, 1964, prior to construction of the Lower Granite Project. These orchard trees have since been removed and were not present at the time of the vegetation study.

Location and Description

The lower Granite lock and dam is located at the head of the Little Goose pool approximately 107 miles (172.2 km.) upstream from the mouth of the Snake River in the southeastern corner of Washington next to Idaho (Corps of Engineers, 1971). Lewiston, Idaho, is located about 35 miles (56.3 km.) upriver from the damsite. The study area encompassed the lake basin between Lewiston and Lower Granite Dam.

This dam will create a reservoir approximately 39 miles (62.8 km.)

long, and will have an effective height of 100 feet (30.5 m.). Because of the dam, a rather narrow lake will be formed having an elevation of 738 feet (224.9 m.) above sea level (Corps of Engineers, 1971). The section of the Pacific Northwest through which the Snake River flows is known as the Columbia Plateau. It is principally comprised of horizontal lava deposits, generally capped with 50 to 75 ft. (15.2 to 22.9 m.) thick layer of soil (Corps of Engineers, 1971).

The Snake River in the reach to be affected by Lower Granite lake flows primarily through a narrow gorge 1,800 to 2,000 feet (549 to 607 m.) deep. Canyon bottom width at the damsite averages about 3,200 feet (975 m.). The river is the predominant focal point within the canyon setting. Through the area, from Asotin to Lower Granite damsite, the Snake River drops about 107 feet (32.6 m.) with a relatively even gradient throughout the 39 mile (62.8 km.) length. The present annual fluctuation in the Snake River averages about 17 feet (5.2 m.) vertically, following the yearly seasonal pattern of high spring flows followed by low flows in later summer and fall. Numerous gravel bars, sandbars, and rocky islands are seasonally inundated and exposed as a result of the river fluctuation. The narrow river bottom and flood plains are flanked by basalt cliffs and steep talus slopes (Corps of Engineers, 1971).

Climate

In the project area, the climate is arid with hot summers and moderate winters, annual precipitation along the river averages about 13 to 18 inches (33 to 46 cm.), mostly occuring during winter and spring months. Wind records for the Lewiston area indicate that winds generally arise either in the east, northeast, or northwest. On a yearly basis

winds of 12 miles (19.3 km.) per hour or less occur about 92 percent of the time. Yearly average wind speeds range from 4 to 6 miles (6.4 to 9.7 km.) per hour (Corps of Engineers, 1971).

History

For countless generations, the Nez Perces, Palouses, Wanapums, and Cayuses were born and lived, blended and died in the valleys on or near the river (Thompson, 1961).

In October 1805, the Lewis-Clark party traveled down the river to the Columbia River. Then in 1811, men of the iron age came from two directions. Down the Columbia from the north came David Thompson, pathfinder for the North West Company of Merchants, Montreal. Up from the Columbia, from Fort Astoria, came David Stuart of John Jacob Astor's Pacific Fur Company (Thompson, 1961).

Gold was discovered in 1858, and also during this year many historical Indian wars were fought. During this year all the tribes north of the Snake River were fully defiant of the white soldiers. The first settlers were eager to move into the Lower Snake River valleys, but they remained close to Fort Walla Walla, and started a village there (Thompson, 1961).

In early 1860, gold was discovered in Idaho. Miners, campfollowers, mining materials, and food required increased transportation. Old Indian trails became roads for pack trains and wagons (Thompson, 1961).

After the excitement of the gold rush, during the late sixties and early seventies, a few settlers clung to the green river valleys, raised a little wheat for their tables, and tended their flocks and herds which

roamed the brown hills. Then in the mid-seventies, it was discovered that grains could be grown on the dry hills. River traffic increased again with the spread of the wheat fields, but the building of the railroads reduced it. Wawawai, a railroad station 5 miles (8.0 km.) from the damsite, at one time was an important shipping and receiving point for wheat (Thompson, 1961).

Just a few miles upriver from Wawawai, is a quarry, now known as Granite Point, the only one on this part of the Snake River. The rock from this quarry helped build the great railroad bridge across the mouth of the Snake in the early eighties. Downriver a few miles from Wawawai, is Penawawa. It was here that an early settler surprised himself and others by planting peach, plum, and apple trees; and saw them grow and produce enormous crops. Thus began the famous Snake River fruit Industry (Thompson, 1961).

Later several ranches head-quartered in the canyon near Wawawai, and their employed crews lodged in bunkhouses. These ranches together with the river bank orchards were the sources of employment. A post office, a store, and warehouses were built (Corps of Engineers, 1971). Now only a few remanents of this important fruit and grain shipping point are evident.

The canyon reach was used extensively for raising, wintering, and feeding of cattle because of its mild climate. Hay, pea silage, and grain were hauled into the canyon for feed, although some hay was produced on the bottom lands (Corps of Engineers, 1971).

Now the abandoned farm houses and range land await the dam completion, the clearing of all major trees and shrubs, and the basin filling.

Physiognomy

Obviously from past history, it is evident that man's activities over hundreds of years has had a tremendous effect on the vegetation. The physiognomy has changed, and it now consists mostly of what man calls noxious weeds interdispersed with a few native species, introduced ornamentals, and river bank vegetation. This will soon be engulfed by water.

Objectives

The principal objective of this study was to identify and assemble a herbarium collection of the plants now inhabiting the basin area. According to Oosting (1956), the first objective in ecological work is to learn the composition and structure of the community under consideration. Daubenmire (1968) stated that at the beginning of any serious study of a plant community it is important not only to learn precisely which species are present, but to be able to recognize them at different stages of development. The highest level of taxonomic accuracy is required for fundamental synecology, the science centered on communities as components of ecosystems.

To assess this vegetation in terms of abundance and presence, constituted two other objectives designed to establish which species determined most of the character of the basin's vegetation. Certainly not all vegetation which inhabits the Snake River Canyon was sampled. The collection involved only the predicted pool area. It was Dr. Ownbey's estimate (personal communication) that perhaps only fifty per cent of the total number of species inhabiting the Snake River Canyon were collected in the predicted pool area; however, many native species which inhabit the general area occur with a very low frequency.

The study included a mile by mile survey, a herbarium collection of preserved specimens, and an assessment of each species in terms of abundance and presence. Because of its more limited coverage, St. John's "Flora of Southeastern Washington and Adjacent Idaho" (1963) was used for most identifications and his nomenclature is followed even when it differs from that of the more comprehensive "Vascular Plants of the Pacific Northwest" (Hitchcock, et al. 1955-1969).

It is intended that this investigation will be used later in determining: (1) successional patterns created by the dam, (2) effects of the covered vegetation on algae, periphyton and aquatic weed growth of the impoundment, (3) planning of new recreational areas along the shoreline, (4) plans for re-establishing wild life habitats destroyed by the impoundment, and (5) providing basic data for use in making post-impoundment comparisons on riparian related vegetation successions.

Materials and Methods

Although the principal objective of this study has been one of taxonomy, an effort was also made to assess the vegetation that will be lost when inundated by water in terms of abundance and presence. Daubenmire (1968) states that rough estimates of density (distinguished as abundance) are used where the objective is to obtain enough information at many sample sites in a short time.

According to Oosting (1956), under some circumstances, it may not be practical to make actual density counts, but plentifulness may rapidly be estimated according to some scale of abundance. These estimates are particularly useful when many similar stands of vegetation have a uniform composition and are to be surveyed within a limited time.

Daubenmire (1968) points out that by definition density requires actual counts of individuals in a definite space, but when counting vegetation, this technique has two serious limitations: it is often impossible to determine what a single individual is when counting species which reproduce vegetatively, for example, grasses; and since the size of mature individual plant species may vary a thousandfold under different growing conditions, the statement there are two individuals of a given species per meter imparts very little biological information.

Because of the time factor and the limitations of actual density counts, an abundance scale was used in this study. The abundance scale used was:

+ present

1 rare

2 uncommon (seldom present)

3 infrequent (here and there)

4 common (more scattered occurrence)

5 very abundant (constitutes practically the whole sample site, example--a wheat field.)

This scale is a modification of the example used by Daubenmire (1968).

Presence is defined by Daubenmire (1968) as the statistics based on a series of stands of dissimilar size. Each piece of vegetation that is essentially homogeneous in all layers and differs from contiguous vegetation types by either quantitative or qualitative characters is defined as a stand (Daubenmire, 1968). Presence is a measure of the regularity of distribution of a species in different stands of an association (Phillips, 1959). An association is defined as plant communities with homogeneous physiognomy, ecological structure and floristic composition. Stands can generally be assigned to this kind of an association by a comparison of the results of samples indicating the abundance of the area covered by the species (Phillips, 1959).

The degree of presence was determined from the data of each locality sampled, and it is expressed as a percentage by dividing the number of sample sites in which a given species occurs by the total number of sample areas and multiplying by 100, and then converted to the following scale (Oosting, 1956):

1 rare (1 - 20% of sample sites)

2 seldom present (21 - 40%)

3 often present (41 - 60%)

4 mostly present (61 - 80%)

5 constantly present (81 - 100%)

The sampling began at the damsite on the north side of the river and continued to Dry Gulch Island (Sec. 19, T. 11 N., R. 46 E.) near Lewiston, Nez Perce Co., Idaho. Sample sites were located one mile, (1.6 km.) apart. This procedure was also used for the south side of the river. There were 29 stations on each side of the river for a total of 58 sample sites.

At each sample site previously unrecorded plant species were collected, and all plants were identified and assigned an abundance classification number. If there was a problem in identification or in determining if a particular species had previously been collected, this species was again collected and brought back to the herbarium for a more precise identification.

At each sample site, a rough estimate of soil and moisture conditions were recorded in a field book; then each specimen was pressed and brought back to the herbarium for identification, drying, mounting, and labeling.

The following is an example of the plant label used for each specimen collected and identified.

Scientific Name:
Common Name:
Family:
Distribution:
Soil and Moisture:
Associated Plants:

Locality:

Habitat:
Elevation:
Date:
City, County, & State:
Collectors:
Information: Number_____

At each sample site collecting and identification began at the river bank and proceeded in all directions until no additional species could be collected or identified within the predicted pool area. On the north side of the river, the re-located railroad tracks had been surveyed and staked every 50 ft. (15.24 m.) or the relocation had been completed, thus, the riverbank and the re-located railroad tracks were used as the guides for the predicted pool area. On the south side collecting continued until an elevation was obtained which was equal to the re-located railroad track or equal to the surveyed stakes. Collecting continued at the sample site in all directions with a 1/8 mile (200 m.) radius until no new species could be found. This sampling method is a modification of the "Species-area curve" technique developed in 1902 by P. Jaccard, and described by Daubenmire (1968). According to Daubenmire these curves may be expected to show a breaking point if homogenous vegetation has been studied. This will provide a visual basis for judging sample adequacy. This sampling technique was used because of the lack of diversity of vegetation in the reservoir basin.

According to Billings (1970), no sampling method has yet appeared that gives a completely adequate picture of every kind of vegetation. Sampling procedures must be adapted to the kind of vegetation being sampled, to the time allowable, and to the completeness desired.

Results

At the beginning of this study, 1971, Dr. Ownbey was asked to estimate the number of plant species which one might expect to collect in this predicted pool area. Dr. Ownbey's estimate was approximately 250 species. The number of species actually collected was 236 which was close to the estimate, but because man has disturbed the predicted pool area so much, there were few native plants remaining in this restricted area.

After checking the plant specimens and identification was completed Dr. Ownbey stated that most of the vegetation collected in the basin area consisted of common roadside weeds and cultivated plants left from the abandoned farms. Of the 236 plant species collected, 96 or 40.68% are referred to as weeds and 30 or 12.71% as obvious ornamentals in botanical manuals and floras.

Vegetation was found to be somewhat different but not greatly varied on the south side of the river, but most of the plant species collected were found on both sides. Of the 236 species collected, 67 or 28.39% were found only on the north side of the river; 45 or 19.07% were collected only on the south side; and 124 or 52.54% were found and identified on both sides of the Snake River.

Casual observation perhaps would suggest that the south side vegetation was greatly different from the north side vegetation. Three contributing factors for this misleading idea are change of abundance ratings, change of presence ratings, and the plant species which are found only on one side of the river. The greatest contrast in vegetation between the two sides of the river occurred within 12 miles (20 km.) of

the damsite. After that the vegetation of the two sides appeared to be less diversified. The north slopes are not as steep as the talus slopes and basalt cliffs found on the south side of the canyon. The northern slopes do not protect or shade the vegetation to the degree of the southern slopes; however, upriver the two sides appear very similar.

Alphabetized Checklist of Plants Identified

	Scientific Name	Common Name
1.	Acer glabrum	Douglas Maple
2.	Acer Negundo	Box Elder
3.	Acer saccharinum	Silver Maple
4.	Achillea Millefolium	Yarrow
5.	Aesculus Hippocastanum	Horse-Chestnut
6.	Agropyron cristatum	Crested Wheatgrass
7.	Agropyron spicatum	Blue Bunch Wheatgrass
8.	Agrostemma Githago	Corn Cockle
9.	Ailanthus altissima	Tree of Heaven
10.	Alyssum alyssoides	Small Alyssum
11.	Amaranthus graecizans	Amaranth
12.	Amaranthus retroflexus	Green Amaranth
13.	Ambrosia artemisiifolia	Roman Wormwood
14.	Amelanchier alnifolia	Service Berry
15.	Amsinckia lycopsoides	Tar Weed
16.	Amsinckia retrorsa	Tar Weed
17.	Anthemis Cotula	Dog Fennel
18.	Anthriscus scandicina	Chervil
19.	Apocynum cannabinum	Smooth Indian Hemp
20.	Arctium minus	Common Burdock
21.	Aristida longiseta	Three-Awn
22.	Artemisia drancunculus	Wormwood
23.	Artemisia Leibergii	Sagebrush
24.	Artemisia ludoviciana	Sagebrush

	Scientific Name	Common Name
25.	Artemisia tridentata	Sagebrush
26.	Asclepias speciosa	Milkweed
27.	Asparagus officinalis	Asparagus
28.	Aster campestris	Aster
29.	Aster species	Aster
30.	Astragalus arrectus	Milk Vetch
31.	Astragalus Purshii	Milk Vetch
32.	Avena fatua	Smooth Wild Oat
33.	Balsamorhiza sagittata	Balsam-Root
34.	Betula occidentalis	Spring Birch
35.	Bidens frondosa	Beggar Ticks
36.	Bromus brizaeformis	Rattlesnake Brome
37.	Bromus mollis	Soft Cheat
38.	Bromus rigidus	Ripgut
39.	Bromus sterilis	Bromegrass
40.	Bromus tectorum	Cheatgrass
41.	Camelina microcarpa	False Flax
42.	Capsella Bursa-pastoris	Shepherd's Purse
43.	Castanea mollissima	Chestnut
44.	Celtis Douglasii	Hackberry
45.	Centaurea Cyanus	Bachelor's Button
46.	Cerastium arvense	Field Chickweed
47.	Chenopodium album	Lamb's Quarters
48.	Chenopodium Botrys	Jerusalem Oak
49.	Chorispora tenella	Chorispora
50.	Chrysopsis hispida	Golden Aster

	Scientific Name	Common Name
51.	Chrysothamnus nauseosus	Rabbit Brush
52.	Chrysothamnus viscidiflorus	Rabbit Brush
53.	Cichorium Intybus	Chicory
54.	Cirsium arvense	Canada Thistle
55.	Cirsium undulatum	Thistle
56.	Cirsium vulgare	Bull Thistle
57.	Clarkia pulchella	Deer Horn
58.	Claytonia arenicola	Claytonia
59.	Claytonia perfoliata	Miner's Lettuce
60.	Clematis ligusticifolia	Clematis
61.	Collomia grandflora	Collomia
62.	Collomia linearis	Collomia
63.	Conium maculatum	Poison Hemlock
64.	Convolvulus arvensis	Morning Glory
65.	Conyza canadensis	Horseweed
66.	Crataegus Douglasii	Black Hawthorn
67.	Cryptantha flaccida	Nievitas
68.	Cynoglossum occidentale	Hound's-Tongue
69.	Cynoglossum officinale	Hound's-Tongue
70.	Dactylis glomerata	Orchardgrass
71.	Dipsacus sylvestris	Wild Teasel
72.	Distichlis stricta	Salt Grass
73.	Echinochloa crusgalli	Barnyard Grass
74.	Elymus cinereus	Ryegrass
75.	Elymus glaucus	Smooth Wild Rye

	Scientific Name	Common Name
76.	Elymus triticoides	Ryegrass
77.	Epilobium glandulosum	Willow Herb
78.	Epilobium paniculatum	Willow Herb
79.	Epilobium species	Willow Herb
80.	Equisetum hyemale	Scouring-rush
81.	Eragrostis cilianensis	Stink-grass
82.	Erigeron speciosus	Fleabane
83.	Erigeron strigosus	Daisy Fleabane
84.	Eriogonum heracleoides	Eriogonum
85.	Eriogonum niveum	Canyon Heather
86.	Eriogonum species	Eriogonum
87.	Eriophyllum lanatum	Oregon Sunshine
88.	Erodium cicutarium	Filaree
89.	Erysimum asperum	Western Wallflower
90.	Euphorbia glyptosperma	Ridge-seeded Spurge
91.	Festuca occidentalis	Fescue
92.	Festuca scabrella	Fescue
93.	Franseria acanthicarpa	Sand Bur
94.	Gaillardia aristata	Blanket Flower
95.	Galium Aparine	Bedstraw
96.	Gaura parviflora	Velvet Weed
97.	Geranium viscosissimum	Geranium
98.	Glycyrrhiza lepidota	Wild Licorice
99.	Gnaphalium palustre	Cudweed
100.	Grindelia nana	Gum Plant

	Scientific Name	Common Name
101.	Grindelia squarrosa	Gum Plant
102.	Helenium macranthum	Sneezeweed
103.	Helianthella uniflora	Helianthella
104.	Helianthus annuus	Common Sunflower
105.	Heuchera cylindrica	Alum Root
106.	Holodiscus discolor	Ocean Spray
107.	Hordeum leporinum	Wall Barley
108.	Hypericum perforatum	Common St. Johnswort
109.	Iris species	Iris
110.	Iva axillaris	Poverty Weed
111.	Juglans nigra	Black Walnut
112.	Juglans regia	Persian Walnut
113.	Lactuca Scariola	Prickly Lettuce
114.	Lagophylla ramosissima	Lagophylla
115.	Lamium amplexicaule	Henbit
116.	Lepidium perfoliatum	Perfoliate Peppergrass
117.	Lepidium virginicum	Peppergrass
118.	Lomatium dissectum	Lomatium
119.	Lomatium triternatum	Lomatium
120.	Lotus denticulatus	Lotus
121.	Lupinus sericeus	Lupine
122.	Lupinus sulphureus	Lupine
123.	Lychnis Coronaria	Lychnis
124.	Malva neglecta	Cheeses
125.	Marrubium vulgare	Common Horehound

	Scientific Name	Common Name
126.	Matricaria Matricarioides	Pineapple-weed
127.	Medicago lupulina	Black Medic
128.	Medicago sativa	Alfalfa
129.	Melilotus alba	White Sweet Clover
130.	Melilotus officinalis	Yellow Melilot
131.	Melilotus species	Sweet Clover
132.	Mentha arvensis	Mint
133.	Mentzelia laevicaulis	Rough Blazing Star
134.	Mimulus guttatus	Monkey Flower
135.	Morus alba	White Mulberry
136.	Nepeta Cataria	Catnip
137.	Oenothera Hookeri	Evening Primrose
138.	Onopordum Acanthium	Scotch Thistle
139.	Opuntia polyacantha	Prickly Pear
140.	Panicum capillare	Old Witch Grass
141.	Parietaria occidentalis	Parietaria
142.	Parthenocissus quinquefolia	Virginia Creeper
143.	Penstemon triphyllus	Beard-Tongue
144.	Phacelia heterophylla	Phacelia
145.	Phacelia leucophylla	Phacelia
146.	Phacelia linearis	Phacelia
147.	Philadelphus Lewisii	Syringa
148.	Phlox longifolia	Phlox
149.	Picea Engelmannii	Engelmann Spruce
150.	Pinus ponderosa	Ponderosa Pine

	Scientific Name	Common Name
151.	Pisum arvense	Field Pea
152.	Plantago lanceolata	Buckhorn Plantain
153.	Plantago Purshii	Plantain
154.	Poa bulbosa	Bulbous Bluegrass
155.	Poa compressa	Canada Bluegrass
156.	Poa interior	Bluegrass
157.	Poa nervosa	Bluegrass
158.	Poa pratensis	Kentucky Bluegrass
159.	Polygonum aviculare	Knotweed
160.	Polygonum hydropiperoides	Polygonum
161.	Polygonum majus	Knotweed
162.	Polygonum sachalinense	Knotweed
163.	Polypodium vulgare	Licorice-root Fern
164.	Populus hastata	Cottonwood
165.	Populus nigra	Lombardy Poplar
166.	Portulaca oleracea	Purslane
167.	Potentilla recta	Cinquefoil
168.	Prunus Armeniaca	Common Apricot
169.	Prunus Mahaleb	Mahaleb Cherry
170.	Prunus Persica	Peach
171.	Prunus species	Stone Fruit
172.	Prunus spinosa	Sloe
173.	Prunus virginiana	Chokecherry
174.	Pyrus communis	Common Pear
175.	Pyrus Malus	Cultivated Apple
176.	Rhamnus Purshiana	Chittam Bark

	Scientific Name	Common Name
177.	Rhus glabra	Smooth Sumac
178.	Rhus radicans	Poison Ivy
179.	Ribes aureum	Golden Currant
180.	Robinia hispida	Bristly Locust
181.	Robinia Pseudo-Acacia	Black Locust
182.	Rorippa curvisiliqua	Arc Cress
183.	Rosa species	Cultivated Rose
184.	Rosa Woodsii	Wild Rose
185.	Rubus laciniatus	Evergreen Blackberry
186.	Rubus nigerrimus	Black-cap Raspberry
187.	Rubus ursinus	Blackberry
188.	Rumex Acetosella	Sheep Sorrel
189.	Rumex crispus	Yellow Dock
190.	Rumex venosus	Sand Dock
191.	Salix amygdaloides	Willow
192.	Salix caudata	Willow
193.	Salix exigua	Willow
194.	Salsola pestifer	Russian Thistle
195.	Sambucus cerulea	Blue Elderberry
196.	Sambucus glauca	Blue Elderberry
197.	Saponaria officinalis	Bouncing Bet
198.	Scutellaria angustifolia	Skullcap
199.	Secale cereale	Rye
200.	Sedum Douglasii	Stonecrop
201.	Setaria glauca	Yellow Foxtail

	Scientific Name	Common Name
202.	Sisymbrium altissimum	Jim Hill Mustard
203.	Sisymbrium officinale	Hedge Mustard
204.	Solanum Dulcamara	Bittersweet
205.	Solanum sarrachoides	Nightshade
206.	Solidago gigantea	Goldenrod
207.	Solidago lepida	Goldenrod
208.	Solidago occidentalis	Goldenrod
209.	Solidago species	Goldenrod
210.	Sphaeralcea Munroana	Salmon Globe Mallow
211.	Sphaeralcea rivularis	Maple-leaved Mallow
212.	Spiraea trichocarpa	Spirea
213.	Sporobolus cryptandrus	Drop-seed
214.	Stellaria media	Common Chickweed
215.	Stephanomeria tenuifolia	Flowering Straw
216.	Symphoricarpos rivularis	Snowberry
217.	Syringa vulgaris	Common Lilac
218.	Tamarix parviflora	Tamarisk
219.	Tanacetum vulgare	Tansy
220.	Taraxacum officinale	Dandelion
221.	Thelypodium laciniatum	Thelypodium
222.	Thuja occidentalis	Arbor Vitae
223.	Tonella floribunda	Tonella
224.	Tragopogon dubius	Goatsbeard
225.	Tribulus terrestris	Puncture Vine
226.	Triticum aestivum	Common Wheat
227.	Typha latifolia	Cat-tail

	Scientific Name	Common Name
228.	Ulmus parvifolia	Chinese Elm
229.	Urtica gracilis	Nettle
230.	Verbascum Blattaria	Moth Mullein
231.	Verbascum Thapsus	Mullein
232.	Verbena bracteata	Vervain
233.	Veronica americana	American Brooklime
234.	Vicia villosa	Hairy Vetch
235.	Vitis species	Grape
236.	Xanthium strumarium	Cocklebur

Presence Rating for the 67 Identified Plant Species

Found Only on North Side of Snake River

(Twenty-nine Stations)

Presence Rating Scale

1 rare (1 - 20% of sample sites)
2 seldom present (21 - 40%)
3 often present (41 - 60%)
4 mostly present(61 - 80%)
5 constantly present (81 - 100%)

Scientific Name	Common Name	Presence Rating
Pisum arvense	Field Pea	3
Gaura parviflora	Velvet Weed	2
Acer glabrum	Douglas Maple	1
Agrostemma Githago	Corn Cockle	1
Alyssum alyssoides	Small Alyssum	1
Amaranthus graecizans	Amaranth	1
Amaranthus retroflexus	Green Amaranth	1
Ambrosia artemisiifolia	Roman Wormwood	1
Anthemis Cotula	Dog Fennel	1
Aristida longiseta	Three-Awn	1
Aster campestris	Aster	1
Astragalus Purshii	Milk Vetch	1
Avena fatua	Smooth Wild Oat	1
Bidens frondosa	Beggar Ticks	1
Bromus mollis	Soft Cheat	1
Camelina microcarpa	False Flax	1
Chenopodium Botrys	Jerusalem Oak	1
Chorispora tenella	Chorispora	1

Scientific Name	Common Name	Presence Rating
Collomia linearis	Collomia	1
Cryptantha flaccida	Nievitas	1
Distichlis stricta	Salt Grass	1
Echinochloa crusgalli	Barnyard Grass	1
Elymus triticoides	Ryegrass	1
Epilobium species	Willow Herb	1
Eragrostis cilianensis	Stink-grass	1
Erigeron speciosus	Fleabane	1
Erigeron strigosus	Daisy Fleabane	1
Eriophyllum lanatum	Oregon Sunshine	1
Euphorbia glyptosperma	Ridge-seeded Spurge	1
Festuca scabrella	Fescue	1
Gnaphalium palustre	Cudweed	1
Grindelia nana	Gum Plant	1
Grindelia squarrosa	Gum Plant	1
Helenium macranthum	Sneezeweed	1
Juglans nigra	Black Walnut	1
Juglans regia	Persian Walnut	1
Lagophylla ramosissima	Lagophylla	1
Lotus denticulatus	Lotus	1
Melilotus alba	White Sweet Clover	1
Mentha arvensis	Mint	1
Mentzelia laevicaulis	Rough Blazing Star	1
Panicum capillare	Old Witch Grass	1
Parietaria occidentalis	Parietaria	1

Scientific Name	Common Name	Presence Rating
Phacelia heterophylla	Phacelia	1
Phacelia linearis	Phacelia	1
Poa interior	Bluegrass	1
Polygonum hydropiperoides	Polygonum	1
Polygonum majus	Knotweed	1
Polygonum sachalinense	Knotweed	1
Polypodium vulgare	Licorice-root Fern	1
Portulaca oleracea	Purslane	1
Prunus Armenica	Common Apricot	1
Prunus spinosa	Sloe	1
Robinia hispida	Bristly Locust	1
Rubus laciniatus	Evergreen Blackberry	1
Salix amygdaloides	Willow	1
Sambucus cerulea	Blue Elderberry	1
Setaria glauca	Yellow Foxtail	1
Solanum sarrachoides	Nightshade	1
Solidago lepida	Goldenrod	1
Solidago occidentalis	Goldenrod	1
Sphaeralcea Munroana	Salmon Globe Mallow	1
Tamarix parviflora	Tamarix	1
Tonella floribunda	Tonella	1
Typha latifolia	Cat-tail	1
Vitis species	Grape	1
Xanthium strumarium	Cocklebur	1

Presence and Average Abundance Ratings for All Identified Plant Species Found on North Side of Snake River

(Twenty-nine Stations)

Abundance Scale

+ present
1 rare
2 uncommon (seldom present)
3 infrequent (here and there)
4 common (more scattered occurrence)
5 very abundant (constitutes practically the whole sample site, example--a wheat field.)

Scientific Name	Common Name	Presence	Av. Abundance
Achillea Millefolium	Yarrow	5	2
Bromus tectorum	Cheatgrass	5	4
Celtis Douglasii	Hackberry	5	1
Lactuca Scariola	Prickly Lettuce	5	3
Sisymbrium altissimum	Jim Hill Mustard	5	3
Amsinckia retrorsa	Tar Weed	4	2
Helianthus annuus	Common Sunflower	4	2
Onopordum Acanthium	Scotch Thistle	4	2
Rumex crispus	Yellow Dock	4	2
Verbascum Blattaria	Moth Mullein	4	2
Vicia villosa	Hairy Vetch	4	2
Agropyron spicatum	Blue Bunch Wheatgrass	3	2
Artemisia dracunculus	Wormwood	3	1
Artemisia ludoviciana	Sagebrush	3	1
Chrysothamnus nauseosus	Rabbit Brush	3	1
Convolvulus arvensis	Morning Glory	3	2
Hordeum leporinum	Wall Barley	3	3

Scientific Name	Common Name	Presence	Av. Abundance
Pisum arvense	Field Pea	3	1
Ribes aureum	Golden Currant	3	1
Rosa Woodsii	Wild Rose	3	1
Tragopogon dubius	Goatsbeard	3	2
Acer saccharinum	Silver Maple	2	1
Apocynum cannabinum	Smooth Indian Hemp	2	1
Bromus rigidus	Ripgut	2	3
Clematis ligusticifolia	Clematis	2	1
Dipsacus sylvestris	Wild Teasel	2	1
Elymus cinereus	Ryegrass	2	2
Epilobium paniculatum	Willow Herb	2	2
Eriogonum niveum	Canyon Heather	2	1
Erodium cicutarium	Filaree	2	1
Gaillardia aristata	Blanket Flower	2	1
Gaura parviflora	Velvet Weed	2	2
Lepidium virginicum	Peppergrass	2	2
Lomatium dissectum	Lomatium	2	2
Lupinus sericeus	Lupine	2	1
Medicago sativa	Alfalfa	2	1
Melilotus species	Sweet Clover	2	2
Opuntia polyacantha	Prickly Pear	2	1
Phacelia leucophylla	Phacelia	2	2
Plantago Purshii	Plantain	2	2
Rhus glabra	Smooth Sumac	2	1
Robinia Pseudo-Acacia	Black Locust	2	2
Salsola pestifer	Russian Thistle	2	2

Scientific Name	Common Name	Presence	Av. Abundance
Solidago gigantea	Goldenrod	2	1
Sporobolus cryptandrus	Drop-seed	2	3
Triticum aestivum	Common Wheat	2	1
Verbascum Thapsus	Mullein	2	2
Verbena bracteata	Vervain	2	1
Acer glabrum	Douglas Maple	1	+
Acer Negundo	Box Elder	1	2
Agrostemma Githago	Corn Cockle	1	2
Ailanthus altissima	Tree of Heaven	1	1
Alyssum alyssoides	Small Alyssum	1	+
Amaranthus graecizans	Amaranth	1	1
Amaranthus retroflexus	Green Amaranth	1	1
Ambrosia artemisiifolia	Roman Wormwood	1	1
Amelanchier alnifolia	Service Berry	1	1
Anthemis Cotula	Dog Fennel	1	1
Arctium minus	Common Burdock	1	1
Aristida longiseta	Three-Awn	1	4
Artemisia Leibergii	Sagebrush	1	+
Asclepias speciosa	Milkweed	1	+
Asparagus officinalis	Asparagus	1	+
Aster campestris	Aster	1	+
Astragalus Purshii	Milk Vetch	1	+
Avena fatua	Smooth Wild Oat	1	2
Balsamorhiza sagittata	Balsam-Root	1	1
Betula occidentalis	Spring Birch	1	+
Bidens frondosa	Beggar Ticks	1	+

Scientific Name	Common Name	Presence	Av. Abundance
Bromus brizaeformis	Rattlesnake Brome	1	1
Bromus mollis	Soft Cheat	1	2
Bromus sterilis	Bromegrass	1	3
Camelina microcarpa	False Flax	1	1
Capsella Bursa-pastoris	Shepherd's Purse	1	1
Centaurea Cyanus	Bachelor's Button	1	+
Chenopodium album	Lamb's Quarters	1	2
Chenopodium Botrys	Jerusalem Oak	1	2
Chorispora tenella	Chorispora	1	1
Chrysopsis hispida	Golden Aster	1	+
Chrysothamnus viscidiflorus	Rabbit Brush	1	+
Cichorium Intybus	Chicory	1	1
Cirsium arvense	Canada Thistle	1	1
Cirsium undulatum	Thistle	1	1
Cirsium vulgare	Bull Thistle	1	2
Collomia grandflora	Collomia	1	+
Collomia linearis	Collomia	1	1
Conium maculatum	Poison Hemlock	1	+
Conyza canadensis	Horseweed	1	2
Crataegus Douglasii	Black Hawthorn	1	1
Cryptantha flaccida	Nievitas	1	2
Dactylis glomerata	Orchardgrass	1	2
Distichlis stricta	Salt Grass	1	1
Echinochloa crusgalli	Barnyard Grass	1	1
Elymus glaucus	Smooth Wild Rye	1	3

Scientific Name	Common Name	Presence	Av. Abundance
Elymus triticoides	Ryegrass	1	3
Epilobium species	Willow Herb	1	1
Equisetum hyemale	Scouring-rush	1	2
Eragrostis cilianensis	Stink-grass	1	2
Erigeron speciosus	Fleabane	1	1
Erigeron strigosus	Daisy Fleabane	1	2
Eriophyllum lanatum	Oregon Sunshine	1	+
Euphorbia glyptosperma	Ridge-seeded Spurge	1	1
Erysimum asperum	Western Wallflower	1	2
Festuca occidentalis	Fescue	1	3
Festuca scabrella	Fescue	1	1
Franseria acanthicarpa	Sand Bur	1	2
Galium Aparine	Bedstraw	1	1
Glycyrrhiza lepidota	Wild Licorice	1	1
Gnaphalium palustre	Cudweed	1	2
Grindelia nana	Gum Plant	1	1
Grindelia squarrosa	Gum Plant	1	2
Helenium macranthum	Sneezeweed	1	1
Hypericum perforatum	Common St. Johnswort	1	1
Iva axillaris	Poverty Weed	1	2
Juglans nigra	Black Walnut	1	1
Juglans regia	Persian Walnut	1	+
Lagophylla ramosissima	Lagophylla	1	1
Lamium amplexicaule	Henbit	1	+
Lepidium perfoliatum	Perfoliate Peppergrass	1	2

Scientific Name	Common Name	Presence	Av. Abundance
Lotus denticulatus	Lotus	1	1
Lupinus sulphureus	Lupine	1	2
Malva neglecta	Cheeses	1	1
Marrubium vulgare	Common Horehound	1	2
Matricaria Matricarioides	Pineapple-weed	1	1
Medicago lupulina	Black Medic	1	2
Melilotus alba	White Sweet Clover	1	3
Melilotus officinalis	Yellow Melilot	1	1
Mentha arvensis	Mint	1	1
Mentzelia laevicaulis	Rough Blazing Star	1	+
Mimulus guttatus	Monkey Flower	1	+
Morus alba	White Mulberry	1	1
Oenothera Hookeri	Evening Primrose	1	1
Panicum capillare	Old Witch Grass	1	2
Parietaria occidentalis	Parietaria	1	1
Parthenocissus quinquefolia	Virginia Creeper	1	+
Penstemon triphyllus	Beard-Tongue	1	1
Phacelia heterophylla	Phacelia	1	+
Phacelia linearis	Phacelia	1	1
Philadelphus Lewisii	Syringa	1	+
Phlox longifolia	Phlox	1	1
Poa bulbosa	Bulbous Bluegrass	1	1
Poa interior	Bluegrass	1	1
Poa pratensis	Kentucky Bluegrass	1	1
Polygonum aviculare	Knotweed	1	1

Scientific Name	Common Name	Presence	Av. Abundance
Polygonum hydropiperoides	Polygonum	1	1
Polygonum majus	Knotweed	1	2
Polygonum sachalinense	Knotweed	1	1
Polypodium vulgare	Licorice-root Fern	1	2
Populus hastata	Cottonwood	1	1
Populus nigra	Lombardy Poplar	1	+
Portulaca oleracea	Purslane	1	2
Prunus Armeniaca	Common Apricot	1	2
Prunus Mahaleb	Mahaleb Cherry	1	+
Prunus Persica	Peach	1	2
Prunus species	Stone Fruit	1	1
Prunus spinosa	Sloe	1	+
Prunus virginiana	Chokecherry	1	1
Pyrus Malus	Cultivated Apple	1	+
Rhus radicans	Poison Ivy	1	1
Robinia hispida	Bristly Locust	1	+
Rorippa curvisiliqua	Arc Cress	1	+
Rubus laciniatus	Evergreen Blackberry	1	2
Rumex Acetosella	Sheep Sorrel	1	1
Rumex venosus	Sand Dock	1	1
Salix anygdaloides	Willow	1	1
Salix caudata	Willow	1	2
Salix exigua	Willow	1	1
Sambucus cerulea	Blue Elderberry	1	1
Sambucus glauca	Blue Elderberry	1	+

Scientific Name	Common Name	Presence	Av. Abundance
Scutellaria angustifolia	Skullcap	1	+
Secale cereale	Rye	1	3
Setaria glauca	Yellow Foxtail	1	2
Sisymbrium officinale	Hedge Mustard	1	1
Solanum sarrachoides	Nightshade	1	2
Solidago lepida	Goldenrod	1	1
Solidago occidentalis	Goldenrod	1	2
Solidago species	Goldenrod	1	+
Sphaeralcea Munroana	Salmon Globe Mallow	1	+
Sphaeralcea rivularis	Maple-leaved Mallow	1	1
Symphoricarpos rivularis	Snowberry	1	1
Syringa vulgaris	Common Lilac	1	1
Tamarix parviflora	Tamarix	1	+
Taraxacum officinale	Dandelion	1	+
Thelypodium laciniatum	Thelypodium	1	1
Tonella floribunda	Tonella	1	1
Typha latifolia	Cat-tail	1	+
Ulmus parvifolia	Chinese Elm	1	+
Urtica gracilis	Nettle	1	+
Veronica americana	American Brooklime	1	+
Vitis species	Grape	1	1
Xanthium strumarium	Cocklebur	1	3

Presence Rating for the 45 Identified Plant Species

Found Only on South Side of Snake River

(Twenty-nine Stations)

Presence Rating Scale

1 rare (1 - 20% of sample sites)
2 seldom present (21 - 40%)
3 often present (41 - 60%)
4 mostly present (61 - 80%)
5 constantly present (81 - 100%)

Scientific Name	Common Name	Presence Rating
Holodiscus discolor	Ocean Spray	2
Sedum Douglasii	Stonecrop	2
Stellaria media	Common Chickweed	2
Aesculus Hippocastanum	Horse-Chestnut	1
Agropyron cristatum	Wheatgrass	1
Amsinckia lycopsoides	Tar Weed	1
Anthriscus scandicina	Chervil	1
Artemisia tridentata	Sagebrush	1
Aster species	Aster	1
Astragalus arrectus	Milk Vetch	1
Castanea mollissima	Chestnut	1
Cerastium arvense	Field Chickweed	1
Clarkia pulchella	Deer Horn	1
Claytonia arenicola	Claytonia	1
Claytonia perfoliata	Miner's Lettuce	1
Cynoglossum occidentale	Hound's-Tongue	1
Cynoglossum officinale	Hound's-Tongue	1
Epilobium glandulosum	Willow Herb	1

Scientific Name	Common Name	Presence Rating
Eriogonum heracleoides	Eriogonum	1
Eriogonum species	Eriogonum	1
Geranium viscosissimum	Geranium	1
Helianthella uniflora	Helianthella	1
Heuchera cylindrica	Alum Root	1
Iris species	Iris	1
Lomatium triternatum	Lomatium	1
Lychnis Coronaria	Lychnis	1
Nepeta Cataria	Catnip	1
Picea Engelmannii	Engelmann Spruce	1
Pinus ponderosa	Ponderosa Pine	1
Plantago lanceolata	Buckhorn Plantain	1
Poa compressa	Canada Bluegrass	1
Poa nervosa	Bluegrass	1
Potentilla recta	Cinquefoil	1
Pyrus communis	Common Pear	1
Rhamnus Purshiana	Chittam Bark	1
Rosa species	Cultivated Rose	1
Rubus nigerrimus	Black-cap Raspberry	1
Rubus ursinus	Blackberry	1
Saponaria officinalis	Bouncing Bet	1
Solanum Dulcamara	Bittersweet	1
Spiraea trichocarpa	Spirea	1
Stephanomeria tenuifolia	Flowering Straw	1
Tanacetum vulgare	Tansy	1

Scientific Name	Common Name	Presence Rating
Thuja occidentalis	Arbor Vitae	1
Tribulus terrestris	Puncture Vine	1

Presence and Average Abundance Ratings for All Identified

Plant Species Found on South Side of Snake River

(Twenty-nine Stations)

Abundance Scale

+ present
1 rare
2 uncommon (seldom present)
3 infrequent (here and there)
4 common (more scattered occurrence)
5 very abundant (constitutes practically the whole sample site, example--a wheat field.)

Scientific Name	Common Name	Presence	Av. Abundance
Achillea Millefolium	Yarrow	5	3
Bromus tectorum	Cheatgrass	5	4
Sisymbrium altissimum	Jim Hill Mustard	5	3
Bromus rigidus	Ripgut	4	4
Celtis Douglasii	Hackberry	4	1
Hordeum leporinum	Wall Barley	4	3
Onopordum Acanthium	Scotch Thistle	4	2
Rosa Woodsii	Wild Rose	4	1
Agropyron spicatum	Blue Bunch Wheatgrass	3	2
Bromus brizaeformis	Rattlesnake Brome	3	2
Clematis ligusticifolia	Clematis	3	1
Erodium cicutarium	Filaree	3	3
Helianthus annuus	Common Sunflower	3	2
Lactuca Scariola	Prickly Lettuce	3	2
Poa pratensis	Kentucky Bluegrass	3	3
Rhus glabra	Smooth Sumac	3	2
Rhus radicans	Poison Ivy	3	2

Scientific Name	Common Name	Presence	Av. Abundance
Tragopogon dubius	Goatsbeard	3	1
Verbascum Thapsus	Mullein	3	1
Vicia villosa	Hairy Vetch	3	2
Amelanchier alnifolia	Service Berry	2	2
Amsinckia retrorsa	Tar Weed	2	1
Artemisia dracunculus	Wormwood	2	1
Artemisia ludoviciana	Sagebrush	2	1
Asclepias speciosa	Milkweed	2	1
Bromus sterilis	Bromegrass	2	2
Chrysothamnus nauseosus	Rabbit Brush	2	2
Crataegus Douglasii	Black Hawthorn	2	2
Dipsacus sylvestris	Wild Teasel	2	2
Elymus glaucus	Smooth Wild Rye	2	2
Equisetum hyemale	Scouring-rush	2	1
Gaillardia aristata	Blanket Flower	2	1
Holodiscus discolor	Ocean Spray	2	1
Hypericum perforatum	Common St. Johnswort	2	1
Lepidium virginicum	Peppergrass	2	2
Lomatium dissectum	Lomatium	2	1
Lupinus sericeus	Lupine	2	2
Medicago lupulina	Black Medic	2	2
Medicago sativa	Alfalfa	2	1
Melilotus officinalis	Yellow Melilot	2	2
Philadelphus Lewisii	Syringa	2	2
Plantago Purshii	Plantain	2	2
Prunus virginiana	Chokecherry	2	2

Scientific Name	Common Name	Presence	Av. Abundance
Ribes aureum	Golden Currant	2	1
Robinia Pseudo-Acacia	Black Locust	2	1
Rumex Acetosella	Sheep Sorrel	2	2
Rumex crispus	Yellow Dock	2	2
Salix exigua	Willow	2	+
Sambucus glauca	Blue Elderberry	2	1
Sedum Douglasii	Stonecrop	2	1
Sporobolus cryptandrus	Drop-seed	2	2
Stellaria media	Common Chickweed	2	1
Urtica glacilis	Nettle	2	1
Verbascum Blattaria	Moth Mullein	2	1
Acer Negundo	Box Elder	1	3
Acer saccharinum	Silver Maple	1	1
Aesculus Hippocastanum	Horse-Chestnut	1	+
Agropyron cristatum	Wheatgrass	1	+
Ailanthus altissima	Tree of Heaven	1	1
Amsinckia lycopsoides	Tar Weed	1	1
Anthriscus scandicina	Chervil	1	2
Apocynum cannabinum	Smooth Indian Hemp	1	1
Arctium minus	Common Burdock	1	1
Artemisia Leibergii	Sagebrush	1	2
Artemisia tridentata	Sagebrush	1	1
Asparagus officinalis	Asparagus	1	1
Aster species	Aster	1	1
Astragalus arrectus	Milk Vetch	1	1
Balsamorhiza sagittata	Balsam-Root	1	1

Scientific Name	Common Name	Presence	Av. Abundance
Betula occidentalis	Spring Birch	1	+
Capsella Bursa-pastoris	Shepherd's Purse	1	2
Castanea mollissima	Chestnut	1	+
Centaurea Cyanus	Bachelor's Button	1	+
Cerastium arvense	Field Chickweed	1	2
Chenopodium album	Lamb's Quarters	1	2
Chrysopsis hispida	Golden Aster	1	3
Chrysothamnus viscidiflorus	Rabbit Brush	1	1
Cichorium Intybus	Chicory	1	2
Cirsium arvense	Canada Thistle	1	+
Cirsium undulatum	Thistle	1	2
Cirsium vulgare	Bull Thistle	1	+
Clarkia pulchella	Deer Horn	1	+
Claytonia arenicola	Claytonia	1	1
Claytonia perfoliata	Miner's Lettuce	1	1
Collomia grandflora	Collomia	1	1
Conium maculatum	Poison Hemlock	1	2
Convolvulus arvensis	Morning Glory	1	2
Conyza canadensis	Horseweed	1	+
Cynoglossum occidentale	Hound's-Tongue	1	1
Cynoglossum officinale	Hound's-Tongue	1	2
Dactylis glomerata	Orchardgrass	1	+
Elymus cinereus	Ryegrass	1	1
Epilobium glandulosum	Willow Herb	1	1
Epilobium paniculatum	Willow Herb	1	+
Eriogonum heracleoides	Eriogonum	1	2

Scientific Name	Common Name	Presence	Av. Abundance
Eriogonum niveum	Canyon Heather	1	1
Eriogonum species	Eriogonum	1	1
Erysimum asperum	Western Wallflower	1	1
Festuca occidentalis	Fescue	1	2
Franseria acanthicarpa	Sand Bur	1	3
Galium Aparine	Bedstraw	1	1
Geranium viscosissimum	Geranium	1	2
Glycyrrhiza lepidota	Wild Licorice	1	1
Helianthella uniflora	Helianthella	1	2
Heuchera cylindrica	Alum Root	1	1
Iris species	Iris	1	+
Iva axillaris	Poverty Weed	1	2
Lamium amplexicaule	Henbit	1	1
Lepidium perfoliatum	Perfoliate Peppergrass	1	2
Lomatium triternatum	Lomatium	1	1
Lupinus sulphureus	Lupine	1	1
Lychnis Coronaria	Lychnis	1	1
Malva neglecta	Cheeses	1	+
Marrubium vulgare	Common Horehound	1	2
Matricaria Matricarioides	Pineapple-weed	1	2
Melilotus species	Sweet Clover	1	1
Mimulus guttatus	Monkey Flower	1	1
Morus alba	White Mulberry	1	+
Nepeta Cataria	Catnip	1	1
Oenothera Hookeri	Evening Primrose	1	1
Opuntia polyacantha	Prickly Pear	1	2

Scientific Name	Common Name	Presence	Av. Abundance
Parthenocissus quinquefolia	Virginia Creeper	1	+
Penstemon triphyllus	Beard-Tongue	1	1
Phacelia leucophylla	Phacelia	1	2
Phlox longifolia	Phlox	1	1
Picea Engelmannii	Engelmann Spruce	1	+
Pinus ponderosa	Ponderosa Pine	1	+
Plantago lanceolata	Buckhorn Plantain	1	+
Poa bulbosa	Bulbous Bluegrass	1	3
Poa compressa	Canada Bluegrass	1	3
Poa nervosa	Bluegrass	1	3
Polygonum aviculare	Knotweed	1	1
Populus hastata	Cottonwood	1	1
Populus nigra	Lombardy Poplar	1	2
Potentilla recta	Cinquefoil	1	+
Prunus Mahaleb	Mahaleb Cherry	1	+
Prunus Persica	Peach	1	1
Prunus species	Stone Fruit	1	+
Pyrus communis	Common Pear	1	+
Pyrus Malus	Cultivated Apple	1	1
Rhamnus Purshiana	Chittam Bark	1	2
Rorippa curvisiliqua	Arc Cress	1	1
Rosa species	Cultivated Rose	1	1
Rubus nigerrimus	Black-cap Raspberry	1	2
Rubus ursinus	Blackberry	1	1
Rumex venosus	Sand Dock	1	1

Scientific Name	Common Name	Presence	Av. Abundance
Salix caudata	Willow	1	1
Salsola pestifer	Russian Thistle	1	2
Saponaria officinalis	Bouncing Bet	1	1
Scutellaria angustifolia	Skullcap	1	1
Secale cereale	Rye	1	4
Sisymbrium officinale	Hedge Mustard	1	2
Solanum Dulcamara	Bittersweet	1	3
Solidago gigantea	Goldenrod	1	2
Solidago species	Goldenrod	1	1
Sphaeralcea rivularis	Maple-leaved Mallow	1	1
Spiraea trichocarpa	Spirea	1	+
Stephanomeria tenuifolia	Flowering Straw	1	+
Symphoricarpos rivularis	Snowberry	1	1
Syringa vulgaris	Common Lilac	1	+
Tanacetum vulgare	Tansy	1	2
Taraxacum officinale	Dandelion	1	2
Thelypodium laciniatum	Thelypodium	1	1
Thuja occidentalis	Arbor Vitae	1	+
Tribulus terrestris	Puncture Vine	1	1
Triticum aestivum	Common Wheat	1	2
Ulmus parvifolia	Chinese Elm	1	+
Verbena bracteata	Vervain	1	1
Veronica americana	American Brooklime	1	1

Presence and Average Abundance Ratings for the 124 Identified Plant Species Found on Both Sides of Snake River

(Fifty-eight Stations)

Scientific Name	Common Name	Presence	Av. Abundance
Achillea Millefolium	Yarrow	5	2
Bromus tectorum	Cheatgrass	5	4
Celtis Douglasii	Hackberry	5	1
Sisymbrium altissimum	Jim Hill Mustard	5	3
Hordeum leporinum	Wall Barley	4	3
Lactuca Scariola	Prickly Lettuce	4	2
Onopordum Acanthium	Scotch Thistle	4	2
Vicia villosa	Hairy Vetch	4	2
Agropyron spicatum	Blue Bunch Wheatgrass	3	2
Amsinckia retrorsa	Tar Weed	3	2
Bromus rigidus	Ripgut	3	3
Helianthus annuus	Common Sunflower	3	2
Rhus glabra	Smooth Sumac	3	2
Ribes aureum	Golden Currant	3	1
Rosa Woodsii	Wild Rose	3	1
Rumex crispus	Yellow Dock	3	2
Tragopogon dubius	Goatsbeard	3	2
Verbascum Blattaria	Moth Mullein	3	1
Artemisia dracunculus	Wormwood	2	1
Artemisia ludoviciana	Sagebrush	2	1
Bromus brizaeformis	Rattlesnake Brome	2	2
Chrysothamnus nauseosus	Rabbit Brush	2	2
Clematis ligusticifolia	Clematis	2	1

Scientific Name	Common Name	Presence	Av. Abundance
Convolvulus arvensis	Morning Glory	2	2
Crataegus Douglasii	Black Hawthorn	2	1
Dipsacus sylvestris	Wild Teasel	2	1
Elymus cinereus	Ryegrass	2	2
Erodium cicutarium	Filaree	2	2
Gaillardia aristata	Blanket Flower	2	1
Lepidium virginicum	Peppergrass	2	2
Lomatium dissectum	Lomatium	2	1
Lupinus sericeus	Lupine	2	2
Medicago sativa	Alfalfa	2	1
Philadelphus Lewisii	Syringa	2	1
Plantago Purshii	Plantain	2	2
Poa pratensis	Kentucky Bluegrass	2	2
Prunus virginiana	Chokecherry	2	1
Rhus radicans	Poison Ivy	2	2
Robinia Pseudo-Acacia	Black Locust	2	1
Salsola pestifer	Russian Thistle	2	2
Sambucus glauca	Blue Elderberry	2	1
Sporobolus cryptandrus	Drop-seed	2	2
Triticum aestivum	Common Wheat	2	1
Urtica gracilis	Nettle	2	1
Verbascum Thapsus	Mullein	2	1
Acer Negundo	Box Elder	1	3
Acer saccharinum	Silver Maple	1	1
Ailanthus altissima	Tree of Heaven	1	1
Amelanchier alnifolia	Service Berry	1	1

Scientific Name	Common Name	Presence	Av. Abundance
Apocynum cannabinum	Smooth Indian Hemp	1	1
Arctium minus	Common Burdock	1	1
Artemisia Leibergii	Sagebrush	1	1
Asclepias speciosa	Milkweed	1	1
Asparagus officinalis	Asparagus	1	1
Balsamorhiza sagittata	Balsam-Root	1	1
Betula occidentalis	Spring Birch	1	+
Bromus sterilis	Bromegrass	1	2
Capsella Bursa-pastoris	Shepherd's Purse	1	2
Centaurea Cyanus	Bachelor's Button	1	+
Chenopodium album	Lamb's Quarters	1	2
Chrysopsis hispida	Golden Aster	1	2
Chrysothamnus viscidiflorus	Rabbit Brush	1	1
Cichorium Intybus	Chicory	1	2
Cirsium arvense	Canada Thistle	1	1
Cirsium undulatum	Thistle	1	1
Cirsium vulgare	Bull Thistle	1	1
Collomia grandflora	Collomia	1	1
Conium maculatum	Poison Hemlock	1	1
Conyza canadensis	Horseweed	1	1
Dactylis glomerata	Orchardgrass	1	1
Elymus glaucus	Smooth Wild Rye	1	2
Epilobium paniculatum	Willow Herb	1	2
Equisetum hyemale	Scouring-rush	1	1
Eriogonum niveum	Canyon Heather	1	1
Erysimum asperum	Western Wallflower	1	1

Scientific Name	Common Name	Presence	Av. Abundance
Festuca occidentalis	Fescue	1	3
Franseria acanthicarpa	Sand Bur	1	3
Galium Aparine	Bedstraw	1	1
Glycyrrhiza lepidota	Wild Licorice	1	1
Hypericum perforatum	Common St. Johnswort	1	1
Iva axillaris	Poverty Weed	1	2
Lamium amplexicaule	Henbit	1	1
Lepidium perfoliatum	Perfoliate Peppergrass	1	2
Lupinus sulphureus	Lupine	1	1
Malva neglecta	Cheeses	1	+
Marrubium vulgare	Common Horehound	1	2
Matricaria Matricarioides	Pineapple-weed	1	1
Medicago lupulina	Black Medic	1	2
Melilotus officinalis	Yellow Melilot	1	2
Melilotus species	Sweet Clover	1	2
Mimulus guttatus	Monkey Flower	1	1
Morus alba	White Mulberry	1	+
Oenothera Hookeri	Evening Primrose	1	1
Opuntia polyacantha	Prickly Pear	1	1
Parthenocissus quinquefolia	Virginia Creeper	1	+
Penstemon triphyllus	Beard-Tongue	1	1
Phacelia leucophylla	Phacelia	1	2
Phlox longifolia	Phlox	1	1
Poa bulbosa	Bulbous Bluegrass	1	2
Polygonum aviculare	Knotweed	1	1
Populus hastata	Cottonwood	1	1

Scientific Name	Common Name	Presence	Av. Abundance
Populus nigra	Lombardy Poplar	1	1
Prunus Mahaleb	Mahaleb Cherry	1	+
Prunus Persica	Peach	1	2
Prunus species	Stone Fruit	1	1
Pyrus Malus	Cultivated Apple	1	1
Rorippa curvisiliqua	Arc Cress	1	+
Rumex Acetosella	Sheep Sorrel	1	2
Rumex venosus	Sand Dock	1	1
Salix caudata	Willow	1	1
Salix exigua	Willow	1	+
Scutellaria angustifolia	Skullcap	1	1
Secale cereale	Rye	1	3
Sisymbrium officinale	Hedge Mustard	1	2
Solidago gigantea	Goldenrod	1	1
Solidago species	Goldenrod	1	1
Sphaeralcea rivularis	Maple-leaved Mallow	1	1
Symphoricarpos rivularis	Snowberry	1	1
Syringa vulgaris	Common Lilac	1	+
Taraxacum officinale	Dandelion	1	1
Thelypodium laciniatum	Thelypodium	1	1
Ulmus parvifolia	Chinese Elm	1	+
Verbena bracteata	Vervain	1	1
Veronica americana	American Brooklime	1	1

Plant Species Identified as Weeds

Scientific Name	Common Name
Achillea Millefolium	Yarrow
Agrostemma Githago	Corn Cockle
Alyssum alyssoides	Small Alyssum
Amaranthus graecizans	Amaranth
Amaranthus retroflexus	Green Amaranth
Ambrosia artemisiifolia	Roman Wormwood
Amsinckia lycopsoides	Tar Weed
Amsinckia retrorsa	Tar Weed
Anthemis Cotula	Dog Fennel
Apocynum cannabinum	Smooth Indian Hemp
Arctium minus	Common Burdock
Artemisia tridentata	Sagebrush
Asclepias speciosa	Milkweed
Avena fatua	Smooth Wild Oat
Bidens frondosa	Beggar Ticks
Bromus mollis	Soft Cheat
Bromus rigidus	Ripgut
Bromus sterilis	Bromegrass
Bromus tectorum	Cheatgrass
Camelina microcarpa	False Flax
Capsella Bursa-pastoris	Shepherd's Purse
Centaurea Cyanus	Bachelor's Button
Cerastium arvense	Field Chickweed
Chenopodium album	Lamb's Quarters

Scientific Name	Common Name
Chenopodium Botrys	Jerusalem Oak
Chorispora tenella	Chorispora
Cichorium Intybus	Chicory
Cirsium arvense	Canada Thistle
Cirsium vulgare	Bull Thistle
Conium maculatum	Poison Hemlock
Convolvulus arvensis	Morning Glory
Conyza canadensis	Horseweed
Cynoglossum officinale	Hound's-Tongue
Dipsacus sylvestris	Wild Teasel
Echinochloa crusgalli	Barnyard Grass
Equisetum hyemale	Scouring-rush
Eragrostis cilianensis	Stink-grass
Erigeron strigosus	Daisy Fleabane
Erodium cicutarium	Filaree
Franseria acanthicarpa	Sand Bur
Galium Aparine	Bedstraw
Gaura parviflora	Velvet Weed
Glycyrrhiza lepidota	Wild Licorice
Grindelia squarrosa	Gum Plant
Helianthus annuus	Common Sunflower
Hordeum leporinum	Wall Barley
Hypericum perforatum	Common St. Johnswort
Iva axillaris	Poverty Weed
Lactuca Scariola	Prickly Lettuce
Lamium amplexicaule	Henbit

Scientific Name	Common Name
Lepidium perfoliatum	Perfoliate Peppergrass
Lepidium virginicum	Peppergrass
Malva neglecta	Cheeses
Marrubium vulgare	Common Horehound
Matricaria Matricarioides	Pineapple-weed
Medicago lupulina	Black Medic
Melilotus alba	White Sweet Clover
Melilotus officinalis	Yellow Melilot
Mentha arvensis	Mint
Nepeta Cataria	Catnip
Onopordum Acanthium	Scotch Thistle
Panicum capillare	Old Witch Grass
Plantago lanceolata	Buckhorn Plantain
Plantago Purshii	Plantain
Poa compressa	Canada Bluegrass
Polygonum aviculare	Knotweed
Polygonum hydropiperoides	Polygonum
Polygonum sachalinense	Knotweed
Portulaca oleracea	Purslane
Potentilla recta	Cinquefoil
Prunus virginiana	Chokecherry
Rhus glabra	Smooth Sumac
Rhus radicans	Poison Ivy
Rumex Acetosella	Sheep Sorrel
Rumex crispus	Yellow Dock
Salsola pestifer	Russian Thistle

Scientific Name	Common Name
Saponaria officinalis	Bouncing Bet
Setaria glauca	Yellow Foxtail
Sisymbrium altissimum	Jim Hill Mustard
Sisymbrium officinale	Hedge Mustard
Solanum Dulcamara	Bittersweet
Solanum sarrachoides	Nightshade
Solidago gigantea	Goldenrod
Solidago occidentalis	Goldenrod
Stellaria media	Common Chickweed
Tanacetum vulgare	Tansy
Taraxacum officinale	Dandelion
Tragopogon dubius	Goatsbeard
Tribulus terrestris	Puncture Vine
Typha latifolia	Cat-tail
Urtica gracilis	Nettle
Verbascum Blattaria	Moth Mullein
Verbascum Thapsus	Mullein
Verbena bracteata	Vervain
Vicia villosa	Hairy Vetch
Xanthium strumarium	Cocklebur

Discussion

The biological information that can be imparted from observing presence and abundance ratings is important in determining the dominant plants that make up the character of the community. Phytosociological values are necessary for an adequate characterization of a community (Oosting, 1956). An arbitrary but typical example of knowledge imparted from presence and abundance ratings is Onopordum Acanthium, Scotch Thistle. This species was found on both sides of the river and had a presence rating of 4, meaning it occurred in 61 - 80% of the 58 sample sites; but its average abundance rating was only 2, based on a scale of 1 to 5, which indicated its occurrence is uncommon. From this information one can conclude that Scotch Thistle inhabited most of the predicted pool area, but not in great numbers.

Scotch Thistle is one of the following list of 8 plants which seemed to occur at almost every station in the pool area: Achillea Millefolium, Bromus tectorum, Celtis Douglasii, Hordeum leporinum, Lactuca Scariola, Onopordum Acanthium, Sisymbrium altissimum, and Vicia villosa. As one might expect, all of these plants were assigned a presence rating of either 4 or 5 on both sides of the river. Also all of these species are classified as weeds.

An interesting weed collected was Hypericum perforatum, Common St. Johnswort. It is an introduced weed native of Eurasia and Africa, that is already a serious pest in adjacent states and provinces, and is to be feared in this area. The herbage is poisonous and rather unpalatable and is usually avoided by grazing animals. If much is eaten, it causes blistering and scabbing of the skin, mouth, or eyes, and may cause death

(St. John, 1963).

In 1948 Chrysolina hyperici, the Klamath Beetle, was introduced in Washington as a biological control of this plant (U. S. Department of Agriculture, 1952). One can find, what appears as hundreds of these beetles, devouring the herbage of a single plant on the south side of the river. Both the presence and average abundance rating of this plant were one.

Some of the native plants have even become weedy, for example, Conyza canadensis, Horseweed (St. John, 1963).

The fact that 40.68% of the plants are classified as weeds may partially explain the lack of diversity of vegetation in the study area. Much of this weedy type vegetation is extremely hardy, propagated both sexually and vegetatively in tremendous numbers, and is tolerant to a wide range of environmental conditions. The uniformity of the environment is another important factor. Everything is pretty much the same. Uniform habitats are found in the river basin partly because of the hot, dry climate and the similar topography of the canyon bottom and walls found throughout the project area.

Size of sample stations and number of species found at each station did vary somewhat. This was a result of the new location of the railroad tracks which was used as a boundary, how much man had disturbed the area recently, and available moisture. Because of increased moisture, vegetation was generally more plentiful in all the canyon bottoms on both sides of the river. One or two miles upriver from the dam site, south side, moisture was more plentiful and the vegetation was greater in diversity and numbers. But one or two miles upriver, north side, one found the relocated railroad tracks on top of a huge fill which had been recently

constructed next to the river. Here vegetation was small in terms of numbers and diversity. However when one considers both sides of the river for the entire project area, 28 miles (44.8 km.), the environment is comparatively uniform.

North Side Vegetation

Pisum arvense and Gaura parviflora were two of the 67 species collected only on the north side of the river. P. arvense was assigned a presence rating of 3, identified in 41 - 60% of the 29 sample sites located of the north side, and G. parviflora received a rating of 2, identified in 21 - 40% of the sample sites. All of the other 65 species identified only on the north side received a presence rating of only 1, identified in 1 - 20% of the sample sites. This indicated that plant species which inhabited only the north side of the river occurred in only a few locations.

When considering all the vegetation on the north side, regardless of whether or not it occurred on the south side, Achillea Millefolium, Bromus tectorum, Celtis Douglasii, Lactuca Scariola and Sisymbrium altissimum all received a presence rating of 5, they occurred in 81 - 100% of the 29 sample sites; but the average abundance of B. tectorum was four times greater than that of C. Douglasii, and twice that of A. Millefolium. All of these species were found frequently along most of the north side of the river, but they vary greatly in terms of numbers.

South Side Vegetation

Holodiscus discolor, Sedum Douglasii, and Stellaria media were three

of the 45 species which were found only along the south side of the river and had the highest presence rating of 2. All of the other 42 species found only on the south side received a presence rating of 1. This rating also indicated as it did on the north side of the river that the species which inhabited only one side of the river occurred in only a few locations of the predicted pool area, 1 - 20% of the 29 sample sites.

When all plants of the south side vegetation were considered, A. Millefolium, B. tectorum, and S. altissimum, all received a presence rating of 5, the same rating as was assigned to these species on the north side; however, C. Douglasii did not occur as often as did L. Scariola. C. Douglasii was assigned a 4, 61 - 80% of the 29 sample sites, and L. Scariola decreased to a 3 in the presence rating, 41 - 60% of the sample sites. When considering the three species which occurred most frequently along the south side, the data indicated B. tectorum appeared in greater numbers, an abundance rating of 4 was assigned. A. Millefolium and S. altissimum were both assigned an abundance rating of 3, which indicated they occurred here and there.

Vegetation Found on Both Sides of the River

When the data were observed for plant species inhabiting both sides of the river from 58 sample sites, A. Millefolium, B. tectorum, C. Douglasii, and S. altissimum again were all assigned a 5 for their presence rating. This was the same rating as was assigned to these species when each side of the river was considered separately except C. Douglasii decreased to a presence rating of 4 and L. Scariola's rating was reduced to a 3. This data substantiated the fact that these plants were important in developing the character of the community.

One hundred ninety-one plant species were identified at the 29 stations located on the north side of the river, and 169 species identified at the same number of sample sites on the south side. This data indicated the vegetation on the north side was somewhat more diverse, but did not vary greatly from that of the south side. One hundred twenty-four of the 236 species or 52.54% were identified on both sides of the river.

Most of the collecting took place during the month of June, and some early flowering plants were missed. In Dr. Ownbey's opinion the number of species not collected would not be great in numbers, and that most of these plants would be small in size and shortlived. These species would not be significant to the study (Ownbey, personal communication).

Because of the rainfall pattern in Whitman County, there is almost no summer flora. The plant species which were collected would continue to be present all summer, and there would be few new species which would appear later. After the high water during early summer, there would have been a few species appearing along the shoreline which one would not have collected until late summer, but again their numbers would have been small and not significant to the study (Ownbey, personal communication).

The herbarium collection consists of 440 plant specimens. Some of the plant species collected were not in flower at the time of collection; therefore, many species were collected more than once to assure proper identification. From the knowledge and experience of Dr. Ownbey, and by comparing the collected species with herbarium specimens, identification was possible in most situations. If any uncertainty arose the plant collected was assigned only a generic name. There were also a very

few cultivated crops and ornamental plants in which the species could not be determined, but in all situations of this nature the plant could be placed in its proper genus.

Another question considered in more detail was how many of the total plant species which inhabited the Snake River Canyon were collected in the predicted pool area. It was Dr. Ownbey's considered opinion that an estimated 50% were collected. Reasons for this were that the collecting was restricted to the predicted pool area, and because of this the collection consisted mostly of common roadside weeds, cultivated crops, and ornamental plants left from the abandoned farms. Also some early short-lived and late flowering shoreline vegetation were not included because of the time element, since most of the vegetation was collected during June. Some native plants, which are few in number, inhabiting the canyon were not part of the collection because they have very restricted ranges and many of their habitats were not located inside the basin area (Ownbey, personal communication). However, all the common plants which were responsible for making up the character of the vegetation inhabiting the predicted pool area were collected and identified.

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The authority, experience, and knowledge of Dr. Marion Ownbey which he so generously gave with the identification were extremely valuable. He allowed me to use all facilities of the Washington State University Herbarium and spent many hours checking my identification, teaching, and helping me with plants I could not identify alone.

The generosity of the Corps of Engineers who provided pictures, photography equipment, maps and information concerned with accessible roads, landmarks, and townships greatly added to the detail of the project. Mr. Leland Turner and Mr. Jim May provided much assistance in collecting herbarium specimens. Mr. John McKern and Mr. Jeff Asfoor supplied boat transportation for an area inaccessible by automobile. This was all organized, planned and expedited through the assistance of Mr. Thomas Slater.

The boat transportation provided by Mr. Verlan Cochran and his personal knowledge of the Snake River area were necessary aids in gathering data in areas inaccessible by automobile.

The typing skills and suggestions of Mrs. Ferris Clegg were deeply appreciated.

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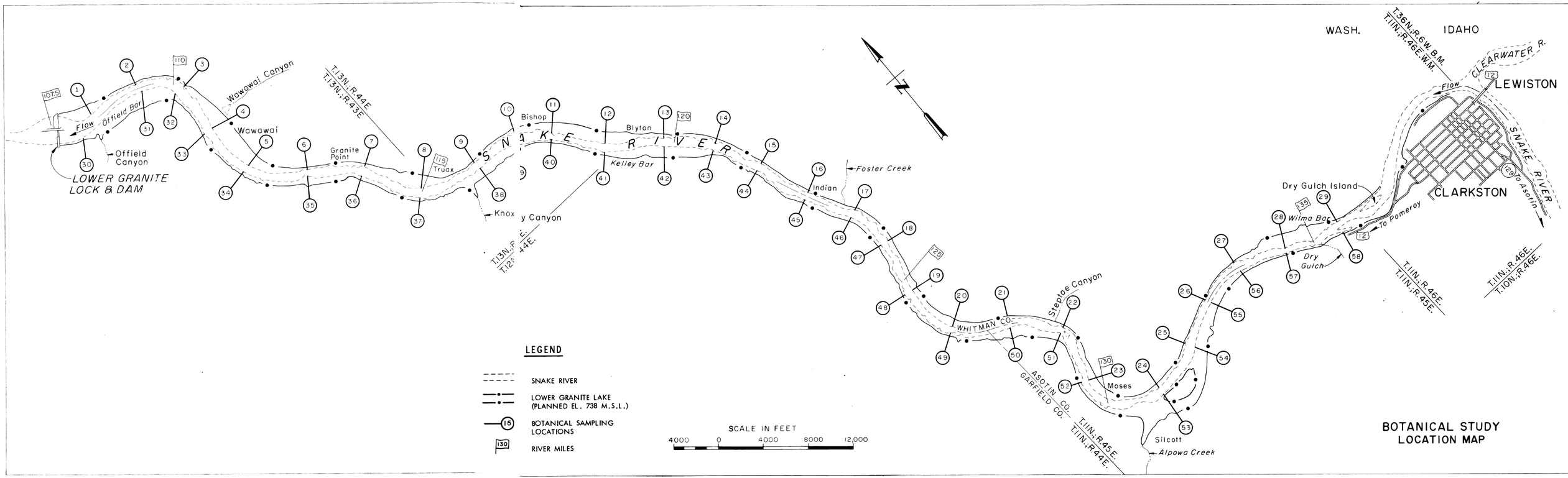
Appendix

The appendix begins with a map that pinpoints the location of each sample station along the river.

Brief descriptions of the soil, topography, and moisture conditions, found at the time of collection, for each of the 58 sample stations are given.

The Location includes a photograph of each of the general areas, names of county roads, and township, range and section numbers.

Also provided is a checklist of all the plant species collected or identified at each station, along with every plant's abundance rating which was determined at that particular sample site.


WASH.
IDAHO
T.36N.;R.6W.B.M.
T.11N.;R.46E.W.M.
CLEARWATER R.
Flow
LEWISTON
SNAKE RIVER
CLARKSTON
To Asotin
To Pomeroy
Dry Gulch Island
Wilma Bar
Dry Gulch
T.11N.;R.46E.
T.11N.;R.45E.
T.10N.;R.46E.
Steptoe Canyon
WHITMAN CO.
ASOTIN CO.
GARFIELD CO.
T.11N.;R.45E.
T.11N.;R.44E.
Moses
Silcott
Alpowa Creek
Foster Creek
Indian
Bishop
Blyton
Kelley Bar
Knox
y Canyon
T.13N.;R.44E.
T.13N.;R.43E.
T.12N.;R.44E.
Wawawai Canyon
Wawawai
Granite Point
Truax
Offield Bar
Offield Canyon
LOWER GRANITE LOCK & DAM
Flow
SNAKE RIVER
LEGEND
SNAKE RIVER
LOWER GRANITE LAKE (PLANNED EL. 738 M.S.L.)
BOTANICAL SAMPLING LOCATIONS
RIVER MILES
SCALE IN FEET
4000 0 4000 8000 12,000
BOTANICAL STUDY LOCATION MAP

Station 1

Location and Description: Area was located at the damsite along Whitman County Road # 900. (Sec. 32, T. 14 N., R. 43 E.) It extended from the riverbank up the dry north slopes to the railroad tracks. Most of the slopes were formed from railroad and highway landfill, and were very sandy and rocky.

Abundance Values Assigned to Plants Collected

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Salsola pestifer	Russian Thistle	4
Achillea Millefolium	Yarrow	3
Agropyron spicatum	Blue Bunch Wheatgrass	3
Artemisia dracunculus	Wormwood	3
Convolvulus arvensis	Morning Glory	3
Elymus triticoides	Ryegrass	3

Scientific Name	Common Name	Rating
Helianthus annuus	Common Sunflower	3
Lactuca Scariola	Prickly Lettuce	3
Secale cereale	Rye	3
Verbascum Blattaria	Moth Mullein	3
Verbena bracteata	Vervain	3
Amsinckia retrorsa	Tar Weed	2
Bromus brizaeformis	Rattlesnake Brome	2
Conyza canadensis	Horseweed	2
Erodium cicutarium	Filaree	2
Gaura parviflora	Velvet Weed	2
Marrubium vulgare	Common Horehound	2
Melilotus alba	White Sweet Clover	2
Melilotus officinalis	Yellow Melilot	2
Onopordum Acanthium	Scotch Thistle	2
Sisymbrium altissimum	Jim Hill Mustard	2
Vicia villosa	Hairy Vetch	2
Lepidium perfoliatum	Perfoliate Peppergrass	1
Lotus denticulatus	Lotus	1
Phacelia leucophylla	Phacelia	1
Artemisia ludoviciana	Sagebrush	+
Celtis Douglasii	Hackberry	+
Clematis ligusticifolia	Clematis	+
Distichlis stricta	Salt Grass	+
Hypericum perforatum	St. Johnswort	+
Oenothera Hookeri	Evening Primrose	+
Phacelia heterophylla	Phacelia	+

Scientific Name	Common Name	Rating
Poa pratensis	Kentucky Bluegrass	+
Rhus glabra	Smooth Sumac	+
Rumex crispus	Yellow Dock	+
Tragopogon dubius	Goatsbeard	+
Typha latifolia	Cat-tail	+

Station 2

Location and Description: Area is located upriver one mile from damsite along Whitman County Road # 900. (Sec. 33, T. 14 N., R. 43 E.) This area has all been disturbed by the construction of the Contractor's Bridge. It encompassed the riverbank and dry north slopes formed from highway and railroad landfill which is sandy and rocky.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
*Epilobium paniculatum	Willow Herb	3
Melilotus alba	White Sweet Clover	3
*Polygonum majus	Knotweed	3
Salsola pestifer	Russian Thistle	3
*Verbascum Thapsus	Mullein	3
*Xanthium strumarium	Cocklebur	3

Scientific Name	Common Name	Rating
Achillea Millefolium	Yarrow	2
*Chenopodium Botrys	Jerusalem Oak	2
Conyza canadensis	Horseweed	2
*Eragrostis cilianensis	Stink-grass	2
*Gnaphalium palustre	Cudweed	2
Lotus denticulatus	Lotus	2
*Panicum capillare	Old Witch Grass	2
*Portulaca oleracea	Purslane	2
*Setaria glauca	Yellow Foxtail	2
*Solanum sarrachoides	Nightshade	2
*Amaranthus retroflexus	Green Amaranth	1
*Echinochloa crusgalli	Barnyard Grass	1
*Euphorbia glyptosperma	Ridge-seeded Spurge	1
*Glycyrrhiza lepidota	Wild Licorice	1
*Helenium macranthum	Sneezeweed	1
Helianthus annuus	Common Sunflower	1
Lactuca Scariola	Prickly Lettuce	1
*Poa interior	Bluegrass	1
*Polygonum aviculare	Knotweed	1
*Polygonum hydropiperoides	Polygonum	1
Verbascum Blattaria	Moth Mullein	1
*Acer glabrum	Douglas Maple	+
*Anthemis Cotula	Dog Fennel	+
*Artemisia dracunculus	Wormwood	+
*Artemisia Leibergii	Wormwood	+
Artemisia ludoviciana	Sagebrush	+

Scientific Name	Common Name	Rating
*Aster campestris	Aster	+
*Celtis Douglasii	Hackberry	+
Convolvulus arvensis	Morning Glory	+
*Dipsacus sylvestris	Wild Teasel	+
*Erodium cicutarium	Filaree	+
*Ribes aureum	Golden Currant	+
Rumex crispus	Yellow Dock	+
*Solidago species	Goldenrod	+

Location and Description: Area is located upriver two miles from damsite along Whitman County Road # 900. (Sec. 34, T. 14 N., R. 43 E.) Land was very gravelly and rocky; it has been disturbed by railroad and highway landfill. The riverbank contained riprap.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
*Epilobium paniculatum	Willow Herb	3
Lactuca Scariola	Prickly Lettuce	3
*Verbascum Thapsus	Mullein	3
Achillea Millefolium	Yarrow	2
Melilotus alba	White Sweet Clover	2
Rumex crispus	Yellow Dock	2
Artemisia dracunculus	Wormwood	1
Conyza canadensis	Horseweed	1

Scientific Name	Common Name	Rating
Glycyrrhiza lepidota	Wild Licorice	1
Helianthus annuus	Common Sunflower	1
Mentzelia laevicaulis	Rough Blazing Star	+
Rhus glabra	Smooth Sumac	+
*Sambucus cerulea	Blue Elderberry	+

Station 4

Location and Description: One mile downriver from Wawawai Railroad Station along Whitman County Road # 900. (Sec. 34, T. 14 N., R. 43 E.) Soil near the river was a sandy loam type. There was a small grove of trees located near the riverbank. This area was one of the Washington State University's Archaeological digging sites. More vegetation was found here than at any previous station. Land was quite flat from railroad tracks to riverbank.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Convolvulus arvensis	Morning Glory	3
*Crataegus Douglasii	Black Hawthorn	3
*Equisetum hyemale	Scouring-rush	3
Erodium cicutarium	Filaree	3

Scientific Name	Common Name	Rating
Lactuca Scariola	Prickly Lettuce	3
Melilotus alba	White Sweet Clover	3
Ribes aureum	Golden Currant	3
*Rosa Woodsii	Wild Rose	3
Verbascum Thapsus	Mullein	3
Achillea Millefolium	Yarrow	2
Anthemis Cotula	Dog Fennel	2
*Avena fatua	Smooth Wild Oats	2
*Chenopodium album	Lamb's Quarters	2
Dipsacus sylvestris	Wild Teasel	2
Epilobium paniculatum	Willow Herb	2
Helianthus annuus	Common Sunflower	2
Lepidium perfoliatum	Peppergrass	2
Onopordum Acanthium	Scotch Thistle	2
Polygonum majus	Knotweed	2
Rhus glabra	Smooth Sumac	2
*Robinia Pseudo-Acacia	Black Locust	2
Rumex crispus	Yellow Dock	2
*Salix caudata	Willow	2
Salsola pestifer	Russian Thistle	2
Secale cereale	Rye	2
Xanthium strumarium	Cocklebur	2
Artemisia dracunculus	Wormwood	1
*Asclepias speciosa	Milkweed	1
Celtis Douglasii	Hackberry	1

Scientific Name	Common Name	Rating
Chenopodium Botrys	Jerusalem Oak	1
Clematis ligusticifolia	Clematis	1
Conyza canadensis	Horseweed	1
*Elymus cinereus	Ryegrass	1
Gaura parviflora	Velvet Weed	1
Hypericum perforatum	Common St. Johnswort	1
Lotus denticulatus	Lotus	1
*Morus alba	White Mulberry	1
Panicum capillare	Old Witch Grass	1
Poa interior	Bluegrass	1
*Solidago lepida	Goldenrod	1
Verbena bracteata	Vervain	1
*Acer saccharinum	Silver Maple	+
Artemisia ludoviciana	Sagebrush	+

Location and Description: Wawawai Railroad Station located four miles upriver from the damsite along Whitman County Road # 900. (Sec. 3, T. 13 N., R. 43 E.) It was quite flat from riverbank to railroad track. Soil was dry except near river and consisted mostly of sand and rock.

Abundance Values Assigned to Plants Collected and Identified

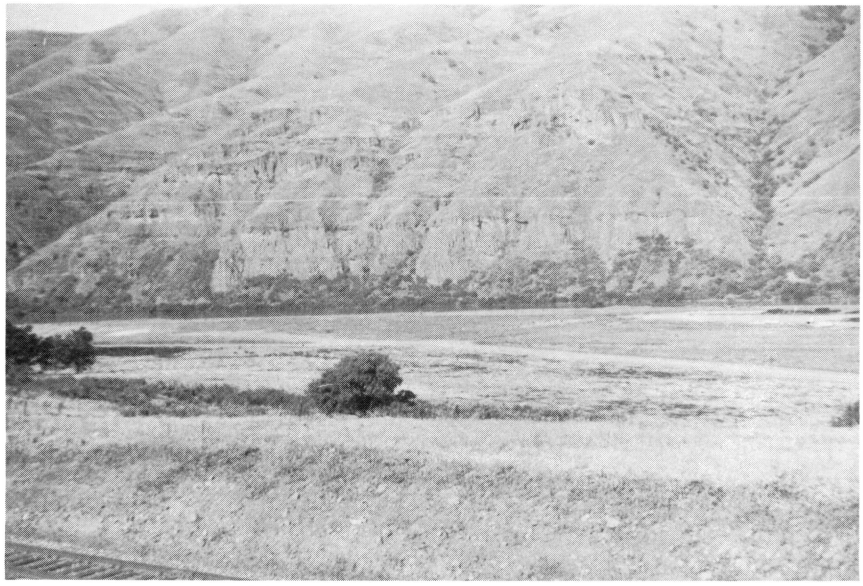
(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Convolvulus arvensis	Morning Glory	3
Elymus glaucus	Smooth Wild Rye	3
Helianthus annuus	Common Sunflower	3
Lactuca Scariola	Prickly Lettuce	3
Robinia Pseudo-Acacia	Black Locust	3

Scientific Name	Common Name	Rating
Rumex crispus	Yellow Dock	3
Sisymbrium altissimum	Jim Hill Mustard	3
Agropyron spicatum	Blue Bunch Wheatgrass	2
Amsinckia retrorsa	Tar Weed	2
*Anthemis Cotula	Dog Fennel	2
Dipsacus sylvestris	Wild Teasel	2
Epilobium paniculatum	Willow Herb	2
Hordeum leporinum	Wall Barley	2
Matricaria Matricarioides	Pineapple-weed	2
*Polypodium vulgare	Licorice-root Fern	2
Salsola pestifer	Russian Thistle	2
*Solidago occidentalis	Goldenrod	2
Tragopogon dubius	Goatsbeard	2
Arctium minus	Common Burdock	1
Bromus brizaeformis	Rattlesnake Brome	1
*Celtis Douglasii	Hackberry	1
Conium maculatum	Poison Hemlock	1
Elymus cinereus	Ryegrass	1
*Lagophylla ramosissima	Lagophylla	1
Medicago lupulina	Black Medic	1
*Medicago sativa	Alfalfa	1
Melilotus officinalis	Yellow Melilot	1
Marrubium vulgare	Common Horehound	1
Onopordum Acanthium	Scotch Thistle	1
Prunus virginiana	Chokecherry	1
Rosa Woodsii	Wild Rose	1

Scientific Name	Common Name	Rating
Rhus glabra	Smooth Sumac	1
Salix exigua	Willow	1
Verbena bracteata	Vervain	1
Vicia villosa	Hairy Vetch	1
Acer saccharinum	Silver Maple	+
Ailanthus altissima	Tree of Heaven	+
Artemisia dracunculus	Wormwood	+
*Centaurea Cyanus	Bachelor's Button	+
Crataegus Douglasii	Black Hawthorn	+
Equisetum hyemale	Scouring-rush	+
*Mimulus guttatus	Monkey Flower	+
Populus nigra	Lombardy Poplar	+
*Pyrus malus	Cultivated Apple	+
Ribes aureum	Golden Currant	+
*Rumex venosus	Sand Dock	+
Solidago species	Goldenrod	+
Triticum aestivum	Common Wheat	+

Station 6



Location and Description: Two miles downriver, north side, from Granite Point along Whitman County Road # 900. (Sec. 10 & 11, T. 13 N., R. 43 E.) Land encompassed a flat bench area which had a gentle slope to the river-bank. The soil consisted of sand and gravel mixed with rock. Land was dry.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Bromus rigidus	Ripgut	3
Convolvulus arvensis	Morning Glory	3
Hordeum leporinum	Wall Barley	3
*Sisymbrium altissimum	Jim Hill Mustard	3
*Bromus mollis	Soft Cheat	2

Scientific Name	Common Name	Rating
*Elymus glaucus	Wild Rye	2
*Epilobium paniculatum	Willow Herb	2
Helianthus annuus	Common Sunflower	2
Lactuca Scariola	Prickly Lettuce	2
Rosa Woodsii	Wild Rose	2
Tragopogon dubius	Goatsbeard	2
Vicia villosa	Hairy Vetch	2
Achillea Millefolium	Yarrow	1
Amsinckia retrorsa	Tar Weed	1
Bromus brizaeformis	Rattlesnake Brome	1
*Capsella Bursa-pastoris	Shepherd's Purse	1
Dipsacus sylvestris	Wild Teasel	1
Erodium cicutarium	Filaree	1
Matricaria Matricarioides	Pineapple-weed	1
Onopordum Acanthium	Scotch Thistle	1
Rhus glabra	Smooth Sumac	1
Robinia Pseudo-Acacia	Black Locust	1
Rumex crispus	Yellow Dock	1
*Salsola pestifer	Russian Thistle	1
Celtis Douglasii	Hackberry	+
*Collomia grandiflora	Collomia	+
*Lamium amplexicaule	Henbit	+
Medicago sativa	Alfalfa	+
Solidago species	Goldenrod	+

Station 7

Location and Description: One mile downriver, north side, from Granite Point along Whitman County Road # 900. (Sec. 14, T. 13 N., R. 43 E.) Land encompassed north slopes and a flat bench area which continued to the riverbank. Soil consisted mainly of railroad and highway landfill.

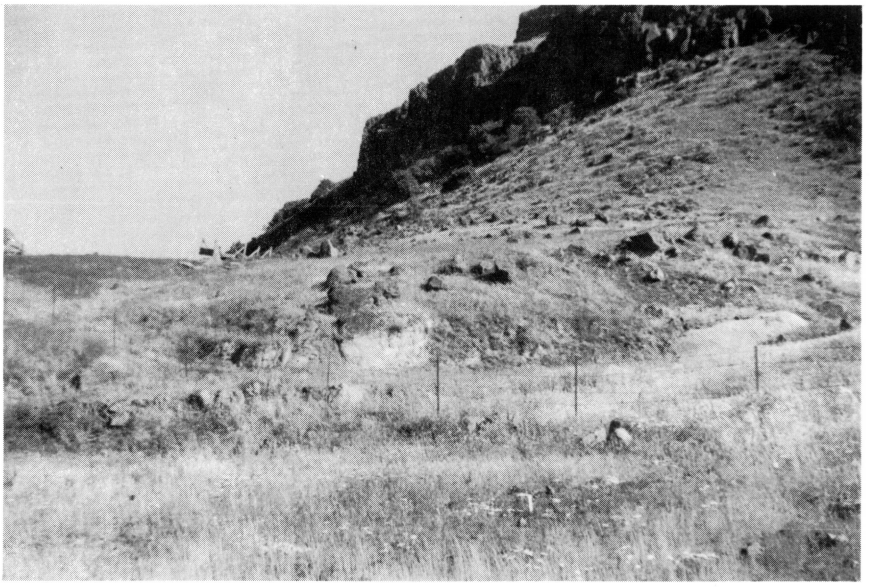
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Elymus cinereus	Ryegrass	4
Lactuca Scariola	Prickly Lettuce	3
Sisymbrium altissimum	Jim Hill Mustard	3
Vicia villosa	Hairy Vetch	3
*Acer Negundo	Box Elder	2
Balsamorhiza sagittata	Balsam-Root	2

Scientific Name	Common Name	Rating
Convolvulus arvensis	Morning Glory	2
Epilobium paniculatum	Willow Herb	2
Helianthus annuus	Common Sunflower	2
Medicago sativa	Alfalfa	2
Robina Pseudo-Acacia	Black Locust	2
Achillea Millefolium	Yarrow	1
Bromus brizaeformis	Rattlesnake Brome	1
Lupinus sericeus	Lupine	1
Lomatium dissectum	Lomatium	1
Melilotus officinalis	Yellow Melilot	1
Philadelphus Lewisii	Syringa	1
Rhus glabra	Smooth Sumac	1
Ribes aureum	Golden Currant	1
Rosa Woodsii	Wild Rose	1
Rumex crispus	Yellow Dock	1
Tragopogon dubius	Goatsbeard	1
Celtis Douglasii	Hackberry	+
Gaillardia aristata	Blanket Flower	+
Galium Aparine	Bedstraw	+
Salix exigua	Willow	+
Verbascum Blattaria	Moth Mullein	+

Station 8



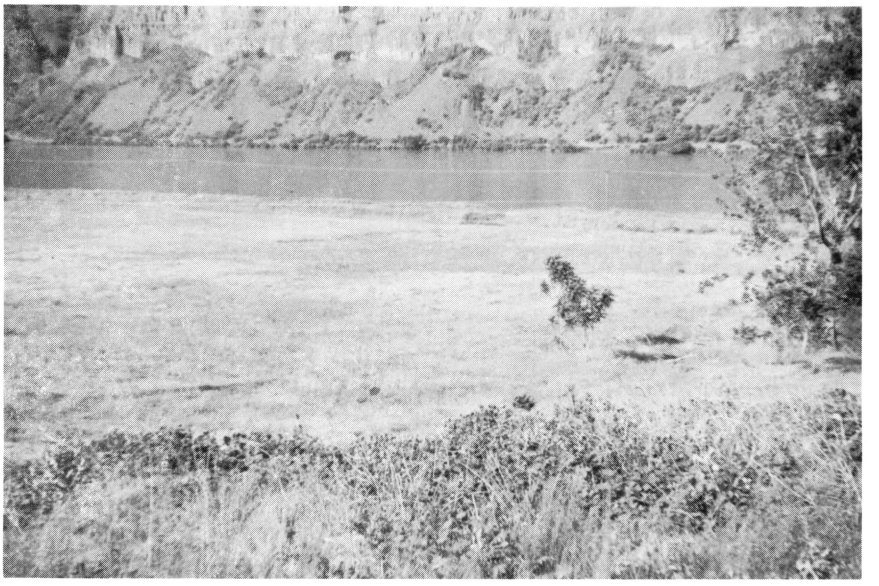
Location and Description: Granite Point which is four miles downriver from Bishop Railroad Station along Whitman County Road # 900. (Sec. 13, T. 13 N., R. 43 E.) Land encompassed steep slopes at Granite Point. Soil consisted mostly of gravel and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Hordeum leporinum	Wall Barley	3
*Sisymbrium altissimum	Jim Hill Mustard	3
Amsinckia retrorsa	Tar Weed	2
Epilobium paniculatum	Willow Herb	2
Eriogonum niveum	Canyon Heather	2

Scientific Name	Common Name	Rating
Helianthus annuus	Common Sunflower	2
Lactuca Scariola	Prickly Lettuce	2
Phacelia leucophylla	Phacelia	2
*Prunus Armeniaca	Common Apricot	2
*Prunus Persica	Peach	2
Verbena bracteata	Vervain	2
Vicia villosa	Hairy Vetch	2
Artemisia dracunculus	Wormwood	1
Artemisia ludoviciana	Sagebrush	1
Balsomorhiza sagittata	Balsam-Root	1
Celtis Douglasii	Hackberry	1
Cirsium arvense	Canada Thistle	1
Convolvulus arvensis	Morning Glory	1
Dipsacus sylvestris	Wild Teasel	1
*Festuca scabrella	Fescue	1
Gaillardia aristata	Blanket Flower	1
Lupinus sericeus	Lupine	1
Marrubium vulgare	Common Horehound	1
Melilotus species	Sweet Clover	1
*Penstemon triphyllus	Beard-tongue	1
Rumex crispus	Yellow Dock	1
Verbascum Blattaria	Moth Mullein	1
Agropyron spicatum	Blue Bunch Wheatgrass	+
*Lagophylla ramosissima	Lagophylla	+



Location and Description: Three miles downriver from Bishop Railroad Station along Whitman County Road # 900. (Sec. 24, T. 13 N., R. 43 E.) Land encompassed a flat bench area located at the base of north slope which was used for farmland. Soil was a mixture of sand and loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Agropyron spicatum	Blue Bunch Wheatgrass	3
Artemisia ludoviciana	Sagebrush	3
Hordeum leporinum	Wall Barley	3
Lactuca Scariola	Prickly Lettuce	3
Sisymbrium altissimum	Jim Hill Mustard	3
Achillea Millefolium	Yarrow	2
Artemisia dracunculus	Wormwood	2

Scientific Name	Common Name	Rating
Convolvulus arvensis	Morning Glory	2
*Grindelia squarrosa	Gum Plant	2
Helianthus annuus	Common Sunflower	2
Onopordum Acanthium	Scotch Thistle	2
Rubus laciniatus	Evergreen Blackberry	2
Rumex crispus	Yellow Dock	2
Vicia villosa	Hairy Vetch	2
Ailanthus altissima	Tree of Heaven	1
Arctium minus	Common Burdock	1
Celtis Douglasii	Hackberry	1
Dipsacus sylvestris	Wild Teasel	1
*Epilobium paniculatum	Willow Herb	1
Philadelphus Lewisii	Syringa	1
*Polygonum sachalinense	Sacaline	1
Rhus glabra	Smooth Sumac	1
Robinia Pseudo-Acacia	Black Locust	1
*Sphaeralcea rivularis	Maple-leaved Mallow	1
Apocynum cannabinum	Smooth Indian Hemp	+
Conium maculatum	Poison Hemlock	+
Medicago sativa	Alfalfa	+
*Ulmus parvifolia	Chinese Elm	+
Urtica gracilis	Nettle	+

Station 10

Location and Description: Truax Railroad Station along Whitman County Road # 900. (Sec. 30, T. 13 N., R. 44 E.) Area included a flat bench area used as farmland which is located at the base of the north slopes. Soil consisted mostly of sand and loam.

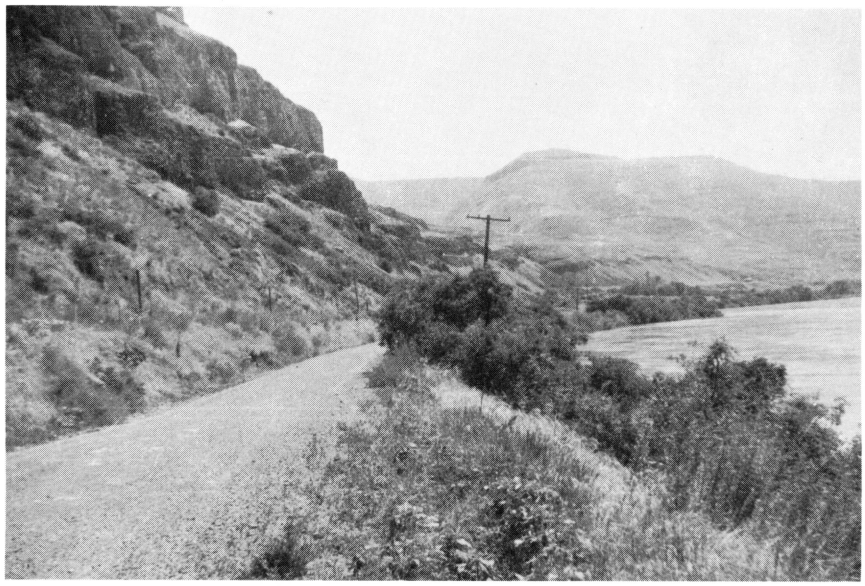
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Agropyron spicatum	Blue Bunch Wheatgrass	3
Convolvulus arvensis	Morning Glory	3
Helianthus annuus	Common Sunflower	3
Hordeum leporinum	Wall Barley	3
Sisymbrium altissimum	Jim Hill Mustard	3
Ailanthus altissima	Tree of Heaven	2
Celtis Douglasii	Hackberry	2

Scientific Name	Common Name	Rating
Chenopodium album	Lamb's Quarters	2
Marrubium vulgare	Common Horehound	2
Robinia Pseudo-Acacia	Black Locust	2
Rumex crispus	Yellow Dock	2
Vicia villosa	Hairy Vetch	2
Arctium minus	Common Burdock	1
Cirsium vulgare	Bull Thistle	1
Malva neglecta	Cheeses	1
Rosa Woodsii	Wild Rose	1
*Rubus laciniatus	Evergreen Blackberry	1
Sambucus glauca	Blue Elderberry	1
*Sisymbrium officinale	Hedge Mustard	1
Morus alba	White Mulberry	+
Populus nigra	Lombardy Popular	+
*Robinia hispida	Rose Acacia	+
Rorippa curvisiliqua	Arc Cress	+
*Tamarix parviflora	Tamarisk	+
*Vitis species	Grape	+

Station 11



Location and Description: One mile downriver from Bishop Railroad Station along Whitman County Road # 900. (Sec. 29, T. 13 N., R. 44 E.) Land encompassed the base of steep north slopes, railroad fill, and highway fill. Soil consisted mostly of gravel and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Elymus cinereus	Ryegrass	3
Helianthus annuus	Common Sunflower	3
Lactuca Scariola	Prickly Lettuce	3
Sisymbrium altissimum	Jim Hill Mustard	3
Verbascum Blattaria	Moth Mullein	3
Achillea Millefolium	Yarrow	2

Scientific Name	Common Name	Rating
*Artemisia ludoviciana	Sagebrush	2
Cirsium vulgare	Bull Thistle	2
Thelypodium laciniatum	Thelypodium	2
Tragopogon dubius	Goatsbeard	2
Celtis Douglasii	Hackberry	1
Lomatium dissectum	Lomatium	1
Medicago sativa	Alfalfa	1
Phacelia leucophylla	Phacelia	1
Pisum arvense	Field Pea	1
Rhus radicans	Poison Ivy	1
Rumex crispus	Yellow Dock	1
Rumex venosus	Sand Dock	1
Salsola pestifer	Russian Thistle	1
Sisymbrium officinale	Hedge Mustard	1
Solidago gigantea	Goldenrod	1
Verbascum Thapsus	Mullein	1
Vicia villosa	Hairy Vetch	1
Dipsacus sylvestris	Wild Teasel	+
Philadelphus Lewisii	Syringa	+
Sambucus glauca	Blue Elderberry	+
Triticum aestivum	Common Wheat	+
Typha latifolia	Cat-tail	+

Station 12

Location and Description: Bishop Railroad Station along Whitman County Road # 900. (Sec. 28, T. 13 N., R. 44 E.) Area included a flat bench area located at the base of north slopes. Much of this land was used for farmland, which included a field of common wheat, Triticum aestivum and a field of rye, Secale cereale. Soil consisted mostly of sand and loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
*Triticum aestivum	Common Wheat	5
Bromus tectorum	Cheatgrass	4
Medicago sativa	Alfalfa	4
*Secale cereale	Rye	4
Amsinckia retrorsa	Tar Weed	3

Scientific Name	Common Name	Rating
Hordeum leporinum	Wall Barley	3
Lactuca Scariola	Prickly Lettuce	3
Melilotus species	Sweet Clover	3
Sisymbrium altissimum	Jim Hill Mustard	3
*Acer saccharinum	Silver Maple	2
Agropyron spicatum	Blue Bunch Wheatgrass	2
*Apocynum cannabinum	Smooth Indian Hemp	2
Artemisia dracunculus	Wormwood	2
Celtis Douglasii	Hackberry	2
*Chenopodium album	Lamb's Quarters	2
*Dactylis glomerata	Orchardgrass	2
Elymus cinereus	Ryegrass	2
*Franseria acanthicarpa	Sand Bur	2
Helianthus annuus	Common Sunflower	2
*Populus hastata	Cottonwood	2
Rhus glabra	Smooth Sumac	2
*Rumex venosus	Sand Dock	2
Vicia villosa	Hairy Vetch	2
Achillea Millefolium	Yarrow	1
Agrostemma Githago	Corn Cockle	1
Ailanthus altissima	Tree of Heaven	1
Artemisia ludoviciana	Sagebrush	1
Bromus brizaeformis	Rattlesnake Brome	1
Clematis ligusticifolia	Clematis	1
Convolvulus arvensis	Morning Glory	1

Scientific Name	Common Name	Rating
Gaillardia aristata	Blanket Flower	1
Galium Aparine	Bedstraw	1
Lepidium virginicum	Peppergrass	1
Lupinus sericeus	Lupine	1
*Matricaria Matricarioides	Pineapple-weed	1
Morus alba	White Mulberry	1
Onopordum Acanthium	Scotch Thistle	1
Pisum arvense	Field Pea	1
Ribes aureum	Golden Currant	1
*Robinia Pseudo-Acacia	Black Locust	1
Rosa Woodsii	Wild Rose	1
Salsola pestifer	Russian Thistle	1
*Solidago gigantea	Goldenrod	1
Symphoricarpos rivularis	Snowberry	1
Syringa vulgaris	Common Lilac	1
Urtica gracilis	Nettle	1
Verbascum Blattaria	Moth Mullein	1
Asclepias speciosa	Milkweed	+
Conium maculatum	Poison Hemlock	+
Erodium cicutarium	Filaree	+
*Parthenocissus quinquefolia	Virginia Creeper	+
*Prunus virginiana	Chokecherry	+
Rumex crispus	Yellow Dock	+
*Salix exigua	Willow	+
*Sambucus glauca	Blue Elderberry	+

Scientific Name	Common Name	Rating
*Sphaeralcea rivularis	Maple-leaved Mallow	+
Tragopogon dubius	Goatsbeard	+

Location and Description: One mile upriver from Bishop Railroad Station along Whitman County Road # 900. (Sec. 34, T. 13 N., R. 44 E.) Land encompassed a rolling hillside, railroad fill and highway fill. Soil consisted mostly of gravel and rock.

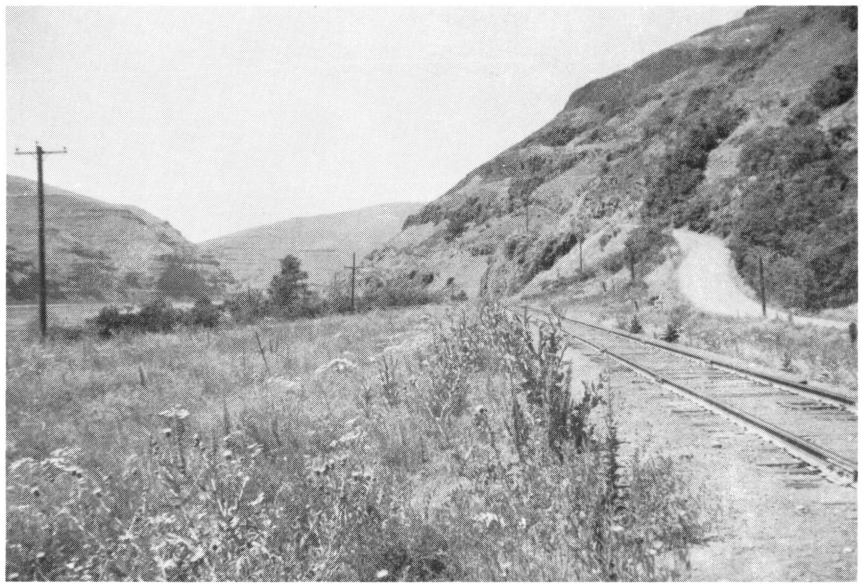
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Gaura parviflora	Velvet Weed	3
Hordeum leporinum	Wall Barley	3
Sisymbrium altissimum	Jim Hill Mustard	3
Sporobolus cryptandrus	Drop-seed	3
Achillea Millefolium	Yarrow	2
Agrostemma Githago	Corn Cockle	2

Scientific Name	Common Name	Rating
Artemisia dracunculus	Wormwood	2
Elymus cinereus	Ryegrass	2
Equisetum hyemale	Scouring-rush	2
*Erysimum asperum	Western Wallflower	2
Pisum arvense	Field Pea	2
Ribes aureum	Golden Currant	2
Verbascum Blattaria	Moth Mullein	2
Agropyron spicatum	Blue Bunch Wheatgrass	1
Amsinckia retrorsa	Tar Weed	1
Balsamorhiza sagittata	Balsam-Root	1
Epilobium species	Willow Herb	1
Lactuca Scariola	Prickly Lettuce	1
*Penstemon triphyllus	Beard-Tongue	1
*Prunus species	Cherry or Plum	1
Rumex crispus	Yellow Dock	1
Tragopogon dubius	Goatsbeard	1
Triticum aestivum	Common Wheat	1
Vicia villosa	Hairy Vetch	1
*Vitis species	Vine Grape	1
*Eriophyllum lanatum	Oregon Sunshine	+
*Glycyrrhiza lepidota	Wild Licorice	+
Lupinus sericeus	Lupine	+
Medicago sativa	Alfalfa	+
Onopordum Acanthium	Scotch Thistle	+
*Syringa vulgaris	Common Lilac	+

Station 14



Location and Description: Two miles upriver from Bishop Railroad Station along Whitman County Road # 900. (Sec. 2, T. 12 N., R. 44 E.) Land encompassed a flat bench area, steep north slopes, railroad fill, and highway fill. Soil consisted of a mixture of sand, loam and gravel.

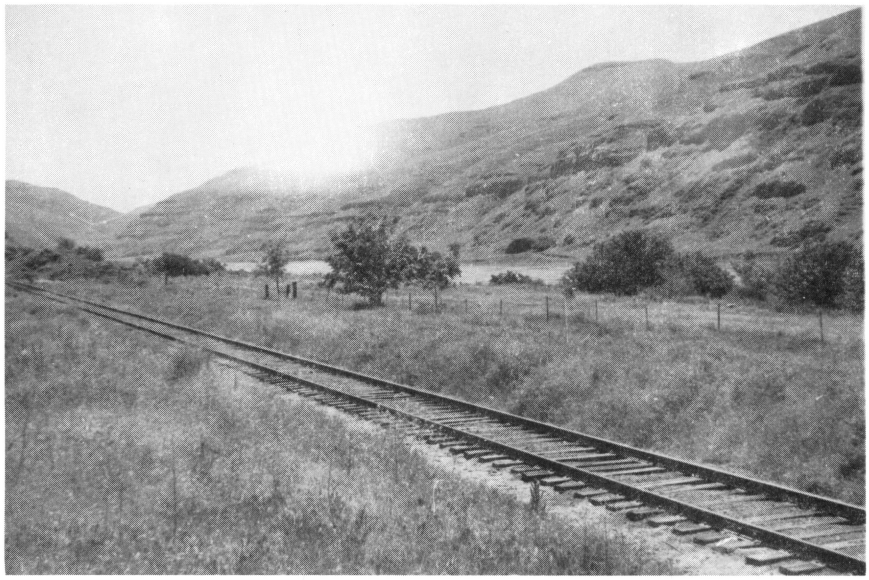
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Sisymbrium altissimum	Jim Hill Mustard	3
Agropyron spicatum	Blue Bunch Wheatgrass	2
Amsinckia retrorsa	Tar Weed	2
Bromus rigidus	Ripgut	2
Helianthus annuus	Common Sunflower	2

Scientific Name	Common Name	Rating
Hordeum leporinum	Wall Barley	2
Onopordum Acanthium	Scotch Thistle	2
Rumex crispus	Yellow Dock	2
Tragopogon dubius	Goatsbeard	2
Verbascum Blattaria	Moth Mullein	2
Acer saccharinum	Silver Maple	1
Agrostemma Githago	Corn Cockle	1
Apocynum cannabinum	Smooth Indian Hemp	1
*Artemisia ludoviciana	Sagebrush	1
Celtis Douglasii	Hackberry	1
Chrysothamnus nauseosus	Rabbit Brush	1
Cirsium undulatum	Thistle	1
Distichlis stricta	Salt Grass	1
Elymus cinereus	Ryegrass	1
Eriogonum niveum	Canyon Heather	1
Gaura parviflora	Velvet Weed	1
Grindelia nana	Gum Plant	1
Lactuca Scariola	Prickly Lettuce	1
Lomatium dissectum	Lomatium	1
Medicago sativa	Alfalfa	1
Phacelia leucophylla	Phacelia	1
Plantago Purshii	Plantain	1
Rhus radicans	Poison Ivy	1
Ribes aureum	Golden Currant	1
Solidago gigantea	Goldenrod	1

Scientific Name	Common Name	Rating
Sporobolus cryptandrus	Drop-seed	1
Verbascum Thapsus	Mullein	1
Vicia villosa	Hairy Vetch	1
Clematis ligusticifolia	Clematis	+
Dipsacus sylvestris	Wild Teasel	+
Opuntia polyacantha	Prickly Pear	+
Philadelphus Lewisii	Syringa	+
Prunus virginiana	Chokecherry	+
Rosa Woodsii	Wild Rose	+
Salix amygdaloides	Willow	+
Urtica gracilis	Nettle	+



Location and Description: Three miles upriver from Bishop Railroad Station along Whitman County Road # 900. (Sec. 11, T. 12 N., R. 44 E.) Land encompassed a flat bench area located at the base of the steep north slopes. Soil consisted of sand, loam, and railroad fill.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Hordeum leporinum	Wall Barley	4
*Sisymbrium altissimum	Jim Hill Mustard	3
Vicia villosa	Hairy Vetch	3
Lactuca Scariola	Prickly Lettuce	2
*Prunus virginiana	Chokecherry	2
Achillea Millefolium	Yarrow	1

Scientific Name	Common Name	Rating
Amsinckia retrorsa	Tar Weed	1
Bromus rigidus	Ripgut	1
Celtis Douglasii	Hackberry	1
*Elymus cinereus	Ryegrass	1
Onopordum Acanthium	Scotch Thistle	1
Ribes aureum	Golden Currant	1
Rosa Woodsii	Wild Rose	1
Rumex crispus	Yellow Dock	1
Salix exigua	Willow	1
Solidago gigantea	Goldenrod	1
Juglans nigra	Black Walnut	+
Medicago sativa	Alfalfa	+
Urtica gracilis	Nettle	+

Station 16

Location and Description: Four miles upriver from Bishop Railroad Station along Whitman County Road # 900. (Sec. 13, T. 12 N., R. 44 E.) Land encompassed railroad fill, highway fill and the base of the steep north slopes. Soil consisted mostly of gravel and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Bromus rigidus	Ripgut	3
*Sisymbrium altissimum	Jim Hill Mustard	3
Amsinckia retrorsa	Tar Weed	2
Lactuca Scariola	Prickly Lettuce	2
Lomatium dissectum	Lomatium	2
Rosa Woodsii	Wild Rose	2

Scientific Name	Common Name	Rating
Rumex crispus	Yellow Dock	2
Verbascum Blattaria	Moth Mullein	2
Agropyron spicatum	Blue Bunch Wheatgrass	1
Apocynum cannabinum	Smooth Indian Hemp	1
Celtis Douglasii	Hackberry	1
Gaillardia aristata	Blanket Flower	1
Gaura parviflora	Velvet Weed	1
Helianthus annuus	Common Sunflower	1
Pisum arvense	Field Pea	1
Rhus glabra	Smooth Sumac	1
Ribes aureum	Golden Currant	1
Tragopogon dubius	Goatsbeard	1
Vicia villosa	Hairy Vetch	1
*Balsamorhiza sagittata	Balsam-Root	+
*Conium maculatum	Poison Hemlock	+
Sambucus glauca	Blue Elderberry	+
Verbascum Thapsus	Mullein	+

Station 17

Location and Description: Five miles downriver from Steptoe Canyon along Whitman County Road # 900. (Sec. 24, T. 12 N., R. 44 E.) Land encompassed a flat bench area at the mouth of Steptoe Canyon. Soil consisted mostly of sand and loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Lomatium dissectum	Lomatium	3
Onopordum Acanthium	Scotch Thistle	3
Phacelia leucophylla	Phacelia	3
Rumex crispus	Yellow Dock	3
Sisymbrium altissimum	Jim Hill Mustard	3

Scientific Name	Common Name	Rating
Amsinckia retrorsa	Tar Weed	2
Bromus rigidus	Ripgut	2
Helianthus annuus	Common Sunflower	2
Lactuca Scariola	Prickly Lettuce	2
*Oenothera Hookeri	Evening Primrose	2
Rhus glabra	Smooth Sumac	2
Celtis Douglasii	Hackberry	1
Chrysothamnus nauseosus	Rabbit Brush	1
Cirsium arvense	Canada Thistle	1
Dipsacus sylvestris	Wild Teasel	1
Hordeum leporinum	Wall Barley	1
Melilotus species	Sweet Clover	1
Salsola pestifer	Russian Thistle	1
*Urtica gracilis	Stinging Nettle	1
Verbascum Thapsus	Mullein	1
*Arctium minus	Common Burdock	+
Artemisia dracunculus	Wormwood	+
Artemisia ludoviciana	Sagebrush	+
*Bibens frondosa	Beggar Tick	+
Clematis ligusticifolia	Clematis	+
Eriogonum niveum	Canyon Heather	+
*Gaura parviflora	Velvet Weed	+
*Juglans regia	English Walnut	+
*Malva neglecta	Cheeses	+
*Mimulus guttatus	Monkey Flower	+

Scientific Name	Common Name	Rating
Opuntia polyacantha	Prickly Pear	+
Philadelphus Lewisii	Syringa	+
Pisum arvense	Field Pea	+
Populus hastata	Cottonwood	+
Ribes aureum	Golden Currant	+
*Rorippa curvisiliqua	Arc Cress	+
*Veronica americana	American Brooklime	+

Station 18

Location and Description: Four miles downriver from Steptoe Canyon along Whitman County Road # 900. (Sec. 25, T. 12 N., R. 44 E.) Land encompassed railroad fill, and a gradual north slope down to river. Soil consisted of railroad fill, sand and loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
*Bromus rigidus	Ripgut	4
*Agropyron spicatum	Blue Bunch Wheatgrass	3
Amsinckia retrorsa	Tar Weed	3
Bromus tectorum	Cheatgrass	3
Hordeum leporinum	Wall Barley	3
Sisymbrium altissimum	Jim Hill Mustard	3
Sporobolus cryptandrus	Drop-seed	3

Scientific Name	Common Name	Rating
*Agrostemma Githago	Corn Cockle	2
*Apocynum cannabinum	Smooth Indian Hemp	2
Celtis Douglasii	Hackberry	2
Convolvulus arvensis	Morning Glory	2
Lactuca Scariola	Prickly Lettuce	2
Onopordum Acanthium	Scotch Thistle	2
Achillea Millefolium	Yarrow	1
Chrysothamnus nauseosus	Rabbit Brush	1
*Cirsium arvense	Canada Thistle	1
Gaillardia aristata	Blanket Flower	1
*Gaura parviflora	Velvet Weed	1
Lupinus sulphureus	Lupine	1
Pisum arvense	Field Pea	1
Tragopogon dubius	Goatsbeard	1
Triticum aestivum	Common Wheat	1
Vicia villosa	Hairy Vetch	1
Phlox longifolia	Phlox	+
*Rhus radicans	Poison Ivy	+

Location and Description: Three miles downriver from Steptoe Canyon along Whitman County Road # 900. (Sec. 36, T. 12 N., R. 44 E.) Land encompassed a flat bench-like area located at the base of steep north slopes. Soil consisted of sand, loam, and large rocks.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Achillea Millefolium	Yarrow	3
*Bromus sterilis	Bromegrass	3
Bromus tectorum	Cheatgrass	3
Elymus triticoides	Ryegrass	3
*Festuca occidentalis	Fescue	3
Gaura parviflora	Velvet Weed	3
Helianthus annuus	Common Sunflower	3

Scientific Name	Common Name	Rating
Sisymbrium altissimum	Jim Hill Mustard	3
Sporobolus cryptandrus	Drop-seed	3
Amsinckia retrorsa	Tar Weed	2
Erodium cicutarium	Filaree	2
Lactuca Scariola	Prickly Lettuce	2
*Lupinus sulphureus	Lupine	2
Plantago Purshii	Plantain	2
Cirsium vulgare	Bull Thistle	1
Convolvulus arvensis	Morning Glory	1
Hordeum leporinum	Wall Barley	1
*Juglans nigra	Black Walnut	1
Lupinus sericeus	Lupine	1
Onopordum Acanthium	Scotch Thistle	1
Pisum arvense	Field Pea	1
Rosa Woodsii	Wild Rose	1
Tragopogon dubius	Goatsbeard	1
Vicia villosa	Hairy Vetch	1
*Asparagus officinalis	Asparagus	+
Celtis Douglasii	Hackberry	+
Chrysothamnus nauseosus	Rabbit Brush	+
Ribes aureum	Golden Currant	+

Station 20

Location and Description: Two miles downriver from Steptoe Canyon along Whitman County Road # 900. (Sec. 1, T. 11 N., R. 44 E.) Land encompassed a small flat bench area located at base of steep north slopes; a small sand bar is also located here. Soil consisted mostly of sand and loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
*Aristida longiseta	Three-Awn Grass	4
*Sporobolus cryptandrus	Drop-seed	4
Achillea Millefolium	Yarrow	3
Bromus tectorum	Cheatgrass	3
*Elymus triticoides	Ryegrass	3
Lomatium dissectum	Lomatium	3
*Apocynum cannabinum	Smooth Indian Hemp	2

Scientific Name	Common Name	Rating
*Erodium cicutarium	Filaree	2
Gaillardia aristata	Blanket Flower	2
Lactuca Scariola	Prickly Lettuce	2
Onopordum Acanthium	Scotch Thistle	2
Plantago Purshii	Plantain	2
Sisymbrium altissimum	Jim Hill Mustard	2
Artemisia dracunculus	Wormwood	1
Chrysothamnus nauseosus	Rabbit Brush	1
*Cirsium vulgare	Bull Thistle	1
Distichlis stricta	Salt Grass	1
*Eriogonum niveum	Canyon Heather	1
*Grindelia nana	Gum Plant	1
*Lupinus sericeus	Lupine	1
Rosa Woodsii	Wild Rose	1
Rumex crispus	Yellow Dock	1
Tragopogon dubius	Goatsbeard	1
Vicia villosa	Hairy Vetch	1
*Alyssum alyssoides	Small Alyssum	+
Amsinckia retrorsa	Tar weed	+
*Artemisia ludoviciana	Sagebrush	+
Celtis Douglasii	Hackberry	+
Cirsium undulatum	Thistle	+
Melilotus species	Sweet Clover	+
Prunus spinosa	Sloe	+
Rumex Acetosella	Sheep Sorrel	+
Verbascum Blattaria	Moth Mullein	+

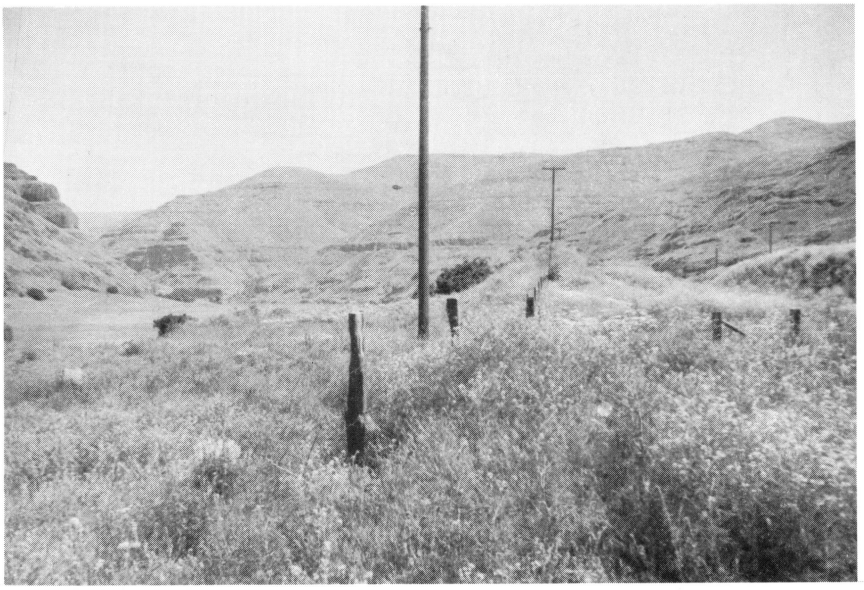
Location and Description: One mile downriver from Steptoe Canyon along Whitman County Road # 900. (Sec. 6, T. 11 N., R. 45 E.) Land encompassed mostly railroad and highway fill. Soil consisted mostly of sand and gravel.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
*Bromus rigidus	Ripgut	3
Achillea Millefolium	Yarrow	2
*Artemisia ludoviciana	Sagebrush	2
Helianthus annuus	Common Sunflower	2
Lactuca Scariola	Prickly Lettuce	2
Melilotus species	Sweet Clover	2
Onopordum Acanthium	Scotch Thistle	2

Scientific Name	Common Name	Rating
Pisum arvense	Field Pea	2
Sisymbrium altissimum	Jim Hill Mustard	2
Tragopogon dubius	Goatsbeard	2
Verbascum Thapsus	Mullein	2
Agropyron spicatum	Blue Bunch Wheatgrass	1
Amsinckia retrorsa	Tar Weed	1
Celtis Douglasii	Hackberry	1
Chrysothamnus nauseosus	Rabbit Brush	1
Clematis ligusticifolia	Clematis	1
Solidago gigantea	Goldenrod	1
*Tonella floribunda	Tonella	1
Vicia villosa	Hairy Vetch	1
Ribes aureum	Golden Currant	+
Triticum aestivum	Common Wheat	+



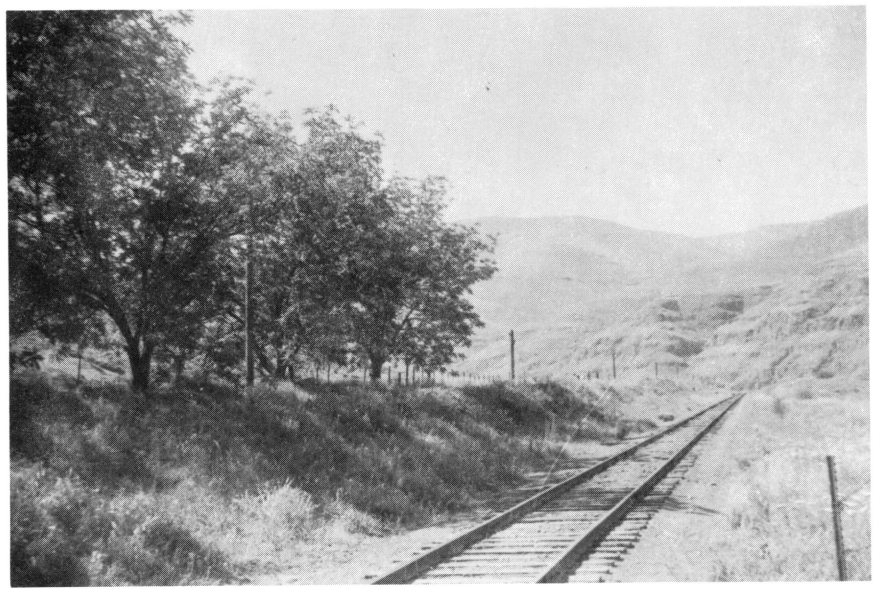
Location and Description: Steptoe Canyon Junction along Whitman County Road # 900. (Sec. 8, T. 11 N., R. 45 E.) Contour of land was relatively flat from highway fill to riverbank. Soil consisted of highway fill, sand, and loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Achillea Millefolium	Yarrow	3
Plantago Purshii	Plantain	3
Bromus tectorum	Cheatgrass	2
Celtis Douglasii	Hackberry	2
*Grindelia squarrosa	Gum Plant	2
Hordeum leporinum	Wall Barley	2
Lactuca Scariola	Prickly Lettuce	2

Scientific Name	Common Name	Rating
Lomatium dissectum	Lomatium	2
Rumex crispus	Yellow Dock	2
Sisymbrium altissimum	Jim Hill Mustard	2
Amelanchier alnifolia	Service Berry	1
Amsinckia retrorsa	Tar Weed	1
*Artemisia ludoviciana	Sagebrush	1
Clematis ligusticifolia	Clematis	1
Lepidium virginicum	Peppergrass	1
*Mentha arvensis	Mint	1
Phacelia leucophylla	Phacelia	1
Rosa Woodsii	Wild Rose	1
*Rumex Acetosella	Sheep Sorrel	1
*Salix amygdaloides	Willow	1
*Chrysopsis hispida	Golden Aster	+
Collomia linearis	Collomia	+
*Gaillardia aristata	Blanket Flower	+
*Scutellaria angustifolia	Skullcap	+
Verbascum Blattaria	Moth Mullein	+



Location and Description: 4.7 miles downriver from Wilma Railroad Station along Whitman County Road # 900. (Sec. 17, T. 11 N., R. 45 E.) Contour of land was flat and encompassed mostly farmland from railroad tracks to riverbank. Soil consisted mostly of sand and loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Hordeum leporinum	Wall Barley	5
*Medicago sativa	Alfalfa	4
Lepidium virginicum	Peppergrass	3
Onopordum Acanthium	Scotch Thistle	3
Sisymbrium altissimum	Jim Hill Mustard	3
Agropyron spicatum	Blue Bunch Wheatgrass	2
Bromus tectorum	Cheatgrass	2
*Dactylis glomerata	Orchardgrass	2

Scientific Name	Common Name	Rating
Lactuca Scariola	Prickly Lettuce	2
*Matricaria Matricarioides	Pineapple-weed	2
*Ailanthus altissima	Tree of Heaven	1
*Artemisia ludoviciana	Sagebrush	1
*Crataegus Douglasii	Black Hawthorn	1
Pisum arvense	Field Pea	1
*Robinia Pseudo-Acacia	Black Locust	1
*Betula occidentalis	Spring Birch	+
Celtis Douglasii	Hackberry	+
Galium Aparine	Bedstraw	+
*Morus alba	White Mulberry	+
*Populus nigra	Lombardy Poplar	+
Triticum aestivum	Common Wheat	+

Station 24

Location and Description: 3.7 miles downriver from Wilma Railroad Station along Whitman County Road # 900. (Sec. 20, T. 11 N., R. 45 E.) Land encompassed the base of the steep north slopes, highway and railroad fill down to riverbank. Soil consisted mostly of sand, loam, and gravel.

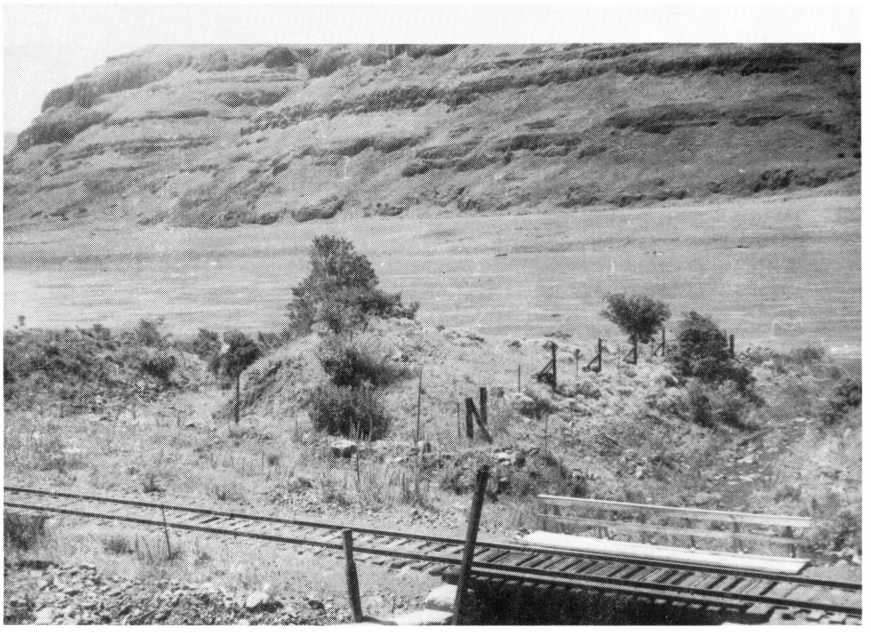
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
*Sporobolus cryptandrus	Drop-seed	4
Bromus tectorum	Cheatgrass	3
Plantago Purshii	Plantain	3
Sisymbrium altissimum	Jim Hill Mustard	3
*Erigeron strigosus	Daisy Fleabane	2
Helianthus annuus	Common Sunflower	2
Lactuca Scariola	Prickly Lettuce	2

Scientific Name	Common Name	Rating
Lepidium virginicum	Peppergrass	2
Melilotus species	Sweet Clover	2
Achillea Millefolium	Yarrow	1
Agropyron spicatum	Blue Bunch Wheatgrass	1
Artemisia dracunculus	Wormwood	1
Celtis Douglasii	Hackberry	1
Chrysothamnus nauseosus	Rabbit Brush	1
*Collomia linearis	Collomia	1
Parietaria occidentalis	Parietaria	1
Pisum arvense	Field Pea	1
*Phlox longifolia	Phlox	1
Tragopogon dubius	Goatsbeard	1
Vicia villosa	Hairy Vetch	1
Lomatium dissectum	Lomatium	+
Opuntia polyacantha	Prickly Pear	+
*Sphaeralcea Munroana	Salmon Globe Mallow	+
Triticum aestivum	Common Wheat	+

Station 25



Location and Description: 2.7 miles downriver from Wilma Railroad Station along Whitman County Road # 900. (Sec. 16, T. 11 N., R. 45 E.) Land encompassed mostly the base of the steep north slopes down to the riverbank. Soil consisted mostly of sand and rock.

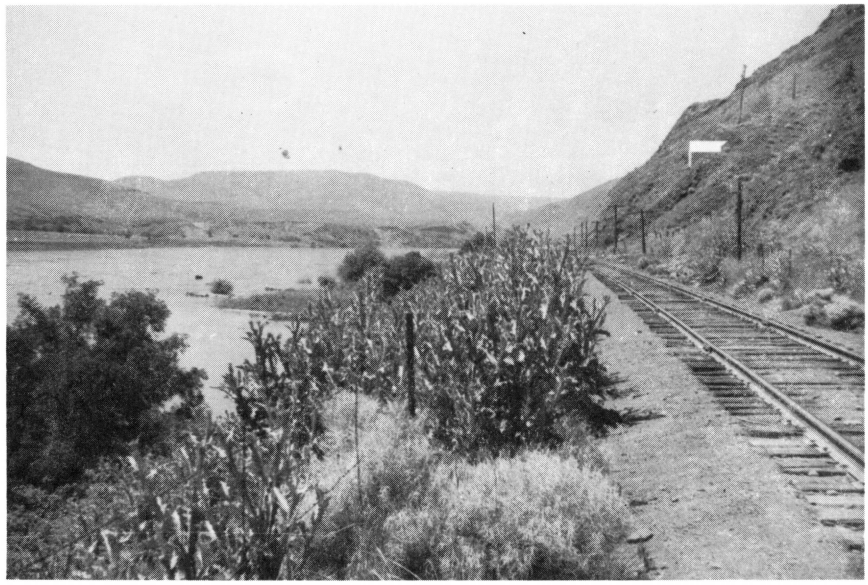
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
*Celtis Douglasii	Hackberry	3
Opuntia polyacantha	Prickly Pear	3
Agropyron spicatum	Blue Bunch Wheatgrass	2
Amsinckia retrorsa	Tar Weed	2
*Artemisia dracunculus	Wormwood	2
Chrysothamnus nauseosus	Rabbit Brush	2

Scientific Name	Common Name	Rating
Helianthus annuus	Common Sunflower	2
Lactuca Scariola	Prickly Lettuce	2
Melilotus species	Sweet Clover	2
*Onopordum Acanthium	Scotch Thistle	2
Sisymbrium altissimum	Jim Hill Mustard	2
Achillea Millefolium	Yarrow	1
Pisum arvense	Field Pea	1
*Salix amygdaloides	Willow	1
Tragopogon dubius	Goatsbeard	1
Vicia villosa	Hairy Vetch	1
Ribes aureum	Golden Currant	+

Station 26



Location and Description: 1.7 miles downriver from Wilma Railroad Station along Whitman County Road # 900. (Sec. 15, T. 11 N., R. 45 E.) Land encompassed the base of the steep north slopes and railroad fill to the riverbank. Soil consisted mostly of sand and gravel.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
*Bromus sterilis	Bromegrass	3
*Onopordum Acanthium	Scotch Thistle	3
Pisum arvense	Field Pea	3
Rumex crispus	Yellow Dock	3
Sisymbrium altissimum	Jim Hill Mustard	3
*Solidago gigantea	Goldenrod	3

Scientific Name	Common Name	Rating
Verbascum Blattaria	Moth Mullein	3
Agropyron spicatum	Blue Bunch Wheatgrass	2
Chrysothamnus nauseosus	Rabbit Brush	2
Clematis ligusticifolia	Clematis	2
Helianthus annuus	Common Sunflower	2
Lepidium virginicum	Peppergrass	2
Medicago lupulina	Black Medic	2
Melilotus species	Sweet Clover	2
*Phacelia leucophylla	Phacelia	2
*Plantago Purshii	Plantain	2
Ribes aureum	Golden Currant	2
Salsola pestifer	Russian Thistle	2
Artemisia ludoviciana	Sagebrush	1
Celtis Douglasii	Hackberry	1
Epilobium paniculatum	Willow Herb	1
*Equisetum hyemale	Scouring-rush	1
*Erysimum asperum	Western Wallflower	1
Lactuca Scariola	Prickly Lettuce	1
Opuntia polyacantha	Prickly Pear	1
*Parietaria occidentalis	Parietaria	1
*Rosa Woodsii	Wild Rose	1
*Salix exiqua	Willow	1
*Thelypodium laciniatum	Thelypodium	1
Tragopogon dubius	Goatsbeard	1
Verbascum Thapsus	Mullein	1
Vicia villosa	Hairy Vetch	1

Scientific Name	Common Name	Rating
Acer saccharinum	Silver Maple	+
*Conium maculatum	Poison Hemlock	+
Triticum aestivum	Common Wheat	+

Station 27

Location and Description: .7 mile downriver from Wilma Railroad Station along Whitman County Road # 900. (Sec. 14, T. 11 N., R. 45 E.) Land encompassed base of north slopes, highway and railroad fill. Soil consisted mostly of sand, gravel, and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Acer saccharinum	Silver Maple	3
Chrysothamnus nauseosus	Rabbit Brush	3
*Iva axillaris	Poverty Weed	3
Lactuca Scariola	Prickly Lettuce	3
*Lepidium virginicum	Peppergrass	3

Scientific Name	Common Name	Rating
Medicago lupulina	Black Medic	3
Pisum arvense	Field Pea	3
*Sisymbrium altissimum	Jim Hill Mustard	3
*Verbascum Blattaria	Moth Mullein	3
*Agropyron spicatum	Blue Bunch Wheatgrass	2
*Clematis ligusticifolia	Clematis	2
*Cryptantha flaccida	Nievitas	2
*Hordeum leporinum	Wall Barley	2
Lomatium dissectum	Lomatium	2
Onopordum Acanthium	Scotch Thistle	2
Ribes aureum	Golden Currant	2
Rumex crispus	Yellow Dock	2
Amsinckia retrorsa	Tar Weed	1
*Artemisia dracunculus	Wormwood	1
Celtis Douglasii	Hackberry	1
Epilobium paniculatum	Willow Herb	1
*Galium Aparine	Bedstraw	1
*Morus alba	White Mulberry	1
Opuntia polyacantha	Prickly Pear	1
*Penstemon triphyllus	Beard-Tongue	1
Tragopogon dubius	Goatsbeard	1
Verbascum Thapsus	Mullein	1
Vicia villosa	Hairy Vetch	1
*Eriogonum niveum	Canyon Heather	+
*Philadelphus Lewisii	Syringa	+

Scientific Name	Common Name	Rating
*Polygonum majus	Knotweed	+
*Prunus mahaleb	Mahaleb Cherry	+
Triticum aestivum	Common Wheat	+

Station 28

Location and Description: Five miles downriver from North Lewiston Substation, The Washington Water Power Company, along Whitman County Road # 900. (Sec. 24, T. 11 N., R. 45 E.) Contour of land was mostly flat from railroad tracks to riverbank. Soil consisted mostly of sand and loam.

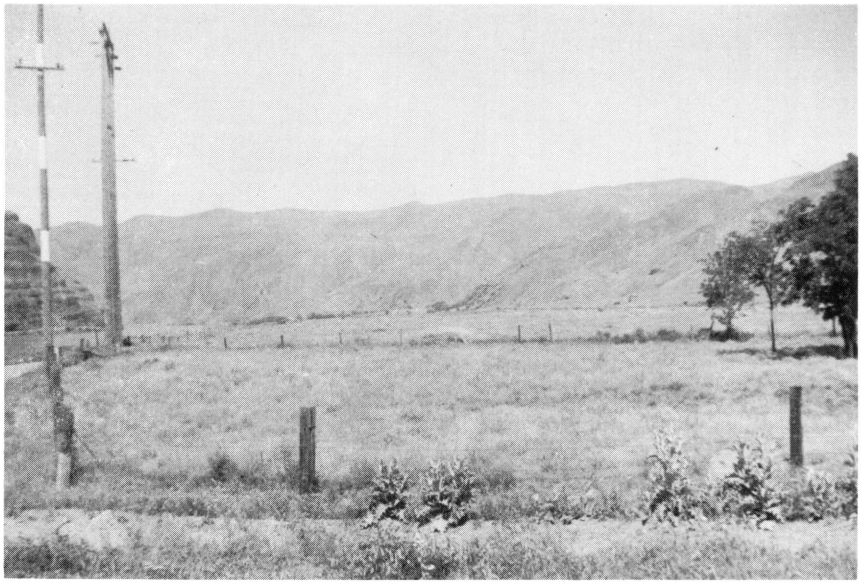
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
*Bromus tectorum	Cheatgrass	4
Sisymbrium altissimum	Jim Hill Mustard	4
*Acer saccharinum	Silver Maple	3
Achillea Millefolium	Yarrow	3
Amsinckia retrorsa	Tar Weed	3
*Hordeum leporinum	Wall Barley	3

Scientific Name	Common Name	Rating
Vicia villosa	Hairy Vetch	3
*Chrysothamnus nauseosus	Rabbit Brush	2
*Distichlis stricta	Salt Grass	2
*Amaranthus graecizans	Amaranth	1
Chenopodium album	Lamb's Quarters	1
*Chorispora tenella	Chorispora	1
*Cichorium Intybus	Chicory	1
Epilobium paniculatum	Willow Herb	1
*Erigeron speciosus	Fleabane	1
*Gaillardia aristata	Blanket Flower	1
Lactuca Scariola	Prickly Lettuce	1
Onopordum Acanthium	Scotch Thistle	1
Opuntia polyacantha	Prickly Pear	1
*Phacelia linearis	Phacelia	1
Pisum arvense	Field Pea	1
*Poa pratensis	Kentucky Bluegrass	1
*Salsola pestifer	Russian Thistle	1
*Amelanchier alnifolia	Service Berry	+
*Artemisia dracunculus	Wormwood	+
*Astragalus Purshii	Milk Vetch	+
Celtis Douglasii	Hackberry	+
*Chrysothamnus viscidiflorus	Rabbit Brush	+
Helianthus annuus	Common Sunflower	+
Taraxacum officinale	Dandelion	+
*Triticum aestivum	Common Wheat	+
*Verbena bracteata	Vervain	+

Station 29



Location and Description: Four miles downriver from North Lewiston Substation, The Washington Water Power Company, along Whitman County Road # 900. (Sec. 19, T. 11 N., R. 46 E.) Contour of land was mostly flat and consisted of farmland. Soil consisted mostly of sand and loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
*Bromus tectorum	Cheatgrass	4
Epilobium paniculatum	Willow Herb	3
Helianthus annuus	Common Sunflower	3
*Lepidium perfoliatum	Perfoliate Peppergrass	3
*Melilotus species	Sweet Clover	3
*Sisymbrium altissimum	Jim Hill Mustard	3
*Vicia villosa	Hairy Vetch	3
*Achillea Millefolium	Yarrow	2

Scientific Name	Common Name	Rating
*Celtis Douglasii	Hackberry	2
*Chrysothamnus nauseosus	Rabbit Brush	2
Convolvulus arvensis	Morning Glory	2
*Lepidium virginicum	Peppergrass	2
*Opuntia polyacantha	Prickly Pear	2
*Pisum arvense	Field Pea	2
Rumex crispus	Yellow Dock	2
*Salsola pestifer	Russian Thistle	2
*Sporobolus cryptandrus	Drop-seed	2
*Agropyron spicatum	Blue Bunch Wheatgrass	1
*Ambrosia artemisiifolia	Roman Wormwood	1
*Amsinckia retrorsa	Tar Weed	1
*Camelina microcarpa	False Flax	1
*Chenopodium album	Lamb's Quarters	1
*Iva axillaris	Poverty Weed	1
*Lomatium dissectum	Lomatium	1
*Oenothera Hookeri	Evening Primrose	1
Onopordum Acanthium	Scotch Thistle	1
*Plantago Purshii	Plantain	1
*Poa bulbosa	Bulbous Bluegrass	1
*Thelypodium laciniatum	Thelypodium	1
*Tragopogon dubius	Goatsbeard	1
*Verbascum Blattaria	Moth Mullein	1
Dipsacus sylvestris	Wild Teasel	+
*Eriogonum niveum	Canyon Heather	+
*Erodium cicutarium	Filaree	+

Scientific Name	Common Name	Rating
*Hordeum leporinum	Wall Barley	+
*Sphaeralcea Munroana	Salmon Globe Mallow	+

Location and Description: Lower Granite Dam. Area encompassed the dam-site on the south side of the Snake River. Because of the huge rocks hauled in for the dam construction, there was little soil. Sand and gravel constituted most of the new highway fill. Vegetation was almost nil because all the land had been recently disturbed.

Abundance Values Assigned to Plants Identified

Scientific Name	Common Name	Rating
Hypericum perforatum	Common St. Johnswort	+

Station 31

Location and Description: One mile upriver from damsite, south side of river, along Garfield County Road # 425. (Sec. 33, T. 14 N., R. 43 E.) Land encompassed the steep south slopes which continued to the highway fill, and a flat bench area which was used for storage of construction materials. Soil consisted of sandy loam and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Agropyron spicatum	Blue Bunch Wheatgrass	3
Elymus glaucus	Smooth Wild Rye	3
*Poa pratensis	Kentucky Bluegrass	3
*Stellaria media	Common Chickweed	3
Achillea Millefolium	Yarrow	2
*Amelanchier alnifolia	Service Berry	2

Scientific Name	Common Name	Rating
*Claytonia perfoliata	Miner's Lettuce	2
*Holodiscus discolor	Ocean Spray	2
Onopordum Acanthium	Scotch Thistle	2
*Philadelphus Lewisii	Syringa	2
*Rhamus Purshiana	Chittam Bark	2
Rumex crispus	Yellow Dock	2
Salsola pestifer	Russian Thistle	2
Sisymbrium altissimum	Jim Hill Mustard	2
Solidago species	Goldenrod	2
*Symphoricarpos rivularis	Snowberry	2
Vicia villosa	Hairy Vetch	2
Asclepias speciosa	Milkweed	1
Bromus brizaeformis	Rattlesnake Brome	1
*Bromus tectorum	Cheatgrass	1
Crataegus Douglasii	Black Hawthorn	1
Dipsacus sylvestris	Wild Teasel	1
*Epilobium glandulosum	Willow Herb	1
Galium Aparine	Bedstraw	1
*Geranium viscossissimum	Geranium	1
*Hypericum perforatum	Common St. Johnswort	1
Marrubium vulgare	Common Horehound	1
Medicago sativa	Alfalfa	1
*Nepta Cataria	Catnip	1
*Pyrus malus	Cultivated Apple	1
Rhus glabra	Smooth Sumac	1

Scientific Name	Common Name	Rating
Ribes aureum	Golden Currant	1
*Rorippa curvisiliqua	Arc Cress	1
Rosa Woodsii	Wild Rose	1
*Sphaeralcea rivularis	Maple-leaved Mallow	1
Tragopogon dubius	Goatsbeard	1
Verbascum Thapsus	Mullein	1
*Veronica americana	American Brooklime	1
*Cirsium arvense	Canada Thistle	+
*Medicago lupulina	Black Medic	+
*Plantago lanceolata	Buckhorn Plantain	+
Urtica gracilis	Nettle	+

Location and Description: Two miles upriver from damsite, south side, along Garfield County Road # 425. (Sec. 34, T. 14 N., R. 43 E.) Land encompassed a bench area which continued from base of south slope to the riverbank. Soil consisted of sand and loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
*Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
*Lupinus sericeus	Lupine	3
*Medicago lupulina	Black Medic	3
Rhus glabra	Smooth Sumac	3
Vicia villosa	Hairy Vetch	3
Acer saccharinum	Silver Maple	2

Scientific Name	Common Name	Rating
Achillea Millefolium	Yarrow	2
*Agropyron spicatum	Blue Bunch Wheatgrass	2
*Helianthella uniflora	Helianthella	2
Helianthus annuus	Common Sunflower	2
Lactuca Scariola	Prickly Lettuce	2
Matricaria Matricarioides	Pineapple-weed	2
*Poa pratensis	Kentucky Bluegrass	2
Sisymbrium altissimum	Jim Hill Mustard	2
*Amsinckia lycopsoides	Tar Weed	1
*Capsella Bursa-pastoris	Shepherd's Purse	1
Eriogonum niveum	Canyon Heather	1
Eriogonum species	Eriogonum	1
Gaillardia aristata	Blanket Flower	1
Hordeum leporinum	Wall Barley	1
*Lamium amplexicaule	Henbit	1
Melilotus species	Sweet Clover	1
Nepeta Cataria	Catnip	1
Onopordum Acanthium	Scotch Thistle	1
*Prunus virginiana	Chokecherry	1
Rosa Woodsii	Wild Rose	1
*Rumex Acetosella	Sheep Sorrel	1
*Stellaria media	Common Chickweed	1
*Tragopogon dubius	Goatsbeard	1
Amsinckia retrorsa	Tar Weed	+
Centaurea Cyanus	Bachelor's Button	+

Scientific Name	Common Name	Rating
Crataegus Douglasii	Black Hawthorn	+
Hypericum perforatum	Common St. Johnswort	+
Malva neglecta	Cheeses	+
*Prunus mahaleb	Mahaleb Cherry	+

Station 33

Location and Description: Three miles upriver from damsite, south side, along Garfield County Road # 425. (Sec. 3, T. 13 N., R. 43 E.) Land encompassed the steep south slopes and graveled road located near river-bank. Soil consisted mostly of sand, gravel, and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus sterilis	Bromegrass	4
Bromus tectorum	Cheatgrass	4
Agropyron spicatum	Blue Bunch Wheatgrass	3
Amelanchier alnifolia	Service Berry	3
*Arctium minus	Common Burdock	3
Bromus brizaeformis	Rattlesnake Brome	3
*Cynoglossum officinale	Common Hound's-Tongue	3

Scientific Name	Common Name	Rating
Hordeum leporinum	Wall Barley	3
Hypericum perforatum	Common St. Johnswort	3
Medicago lupulina	Black Medic	3
*Poa compressa	Canada Bluegrass	3
*Prunus virginiana	Chokecherry	3
Rhus radicans	Poison Ivy	3
Sisymbrium altissimum	Jim Hill Mustard	3
Achillea Millefolium	Yarrow	2
Asclepias speciosa	Milkweed	2
Celtis Douglasii	Hackberry	2
Conium maculatum	Poison Hemlock	2
Crataegus Douglasii	Black Hawthorn	2
Gaillardia aristata	Blanket Flower	2
Helianthus annuus	Common Sunflower	2
Holodiscus discolor	Ocean Spray	2
Lactuca Scariola	Prickly Lettuce	2
Lupinus sericeus	Lupine	2
Marrubium vulgare	Common Horehound	2
Philadelphus Lewisii	Syringa	2
Poa pratensis	Kentucky Bluegrass	2
Rhus glabra	Smooth Sumac	2
Ribes aureum	Golden Currant	2
Rosa Woodsii	Wild Rose	2
Sambucus glauca	Blue Elderberry	2
Clematis ligusticifolia	Clematis	1

Scientific Name	Common Name	Rating
Convolvulus arvensis	Morning Glory	1
Dipsacus sylvestris	Wild Teasel	1
*Glycyrrhiza lepidota	Wild Licorice	1
Helianthella uniflora	Helianthella	1
Lepidium virginicum	Peppergrass	1
Lomatium dissectum	Lomatium	1
Melilotus species	Sweet Clover	1
Nepeta Cataria	Catnip	1
Onopordum Acanthium	Scotch Thistle	1
Rumex crispus	Yellow Dock	1
*Scuttellaria angustifolia	Skullcap	1
Solidago species	Goldenrod	1
Urtica gracilis	Nettle	1
Verbascum Blattaria	Moth Mullein	1
Verbascum Thapsus	Mullein	1
Vicia villosa	Hairy Vetch	1
Verbena bracteata	Vervain	+

Location and Description: Four miles upriver from damsite, south side, along Garfield County Road # 425. (Sec. 10, T. 13 N., R. 43 E.) Land encompassed the steep south slopes and graveled road located near river-bank. Soil consisted mostly of gravel and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Arctium minus	Common Burdock	3
Bromus brizaeformis	Rattlesnake Brome	3
Bromus sterilis	Bromegrass	3
Celtis Douglasii	Hackberry	3
Clematis ligusticifolia	Clematis	3

Scientific Name	Common Name	Rating
Cynoglossum officinale	Hound's-Tongue	3
Dipsacus sylvestris	Wild Teasel	3
Helianthus annuus	Common Sunflower	3
Hordeum leporinum	Wall Barley	3
Lactuca Scariola	Prickly Lettuce	3
Philadelphus Lewisii	Syringa	3
Poa pratensis	Kentucky Bluegrass	3
Prunus virginiana	Chokecherry	3
Rosa Woodsii	Wild Rose	3
Rumex crispus	Yellow Dock	3
Sisymbrium altissimum	Jim Hill Mustard	3
*Solanum Dulcamara	Bittersweet	3
Agropyron spicatum	Blue Bunch Wheatgrass	2
Asclepias speciosa	Milkweed	2
Convolvulus arvensis	Morning Glory	2
*Erysimum asperum	Western Wallflower	2
Geranium viscosissimum	Geranium	2
Hypericum perforatum	Common St. Johnswort	2
Marrubium vulgare	Common Horehound	2
Melilotus officinalis	Yellow Melilot	2
Melilotus species	Sweet Clover	2
Rhus glabra	Smooth Sumac	2
Rhus radicans	Poison Ivy	2
Ribes aureum	Golden Currant	2
*Rubus nigerrimus	Blackcap Raspberry	2
*Rumex Acetosella	Sheep Sorrel	2

Scientific Name	Common Name	Rating
Salix exigua	Willow	2
Sambucus glauca	Blue Elderberry	2
Sphaeralcea rivularis	Maple-leaved Mallow	2
*Tanacetum vulgare	Tansy	2
Taraxacum officinale	Dandelion	2
Urtica gracilis	Nettle	2
Verbascum Blattaria	Moth Mullein	2
Verbena bracteata	Vervain	2
Vicia villosa	Hairy Vetch	2
Artemisia dracunculus	Wormwood	1
*Artemisia ludoviciana	Sagebrush	1
*Chichorium Intybus	Chicory	1
Claytonia perfoliata	Miner's Lettuce	1
*Cynoglossum occidentale	Hound's-Tongue	1
Holodiscus discolor	Ocean Spray	1
*Lychnis Coronaria	Lychnis	1
Mimulus guttatus	Monkey Flower	1
*Populus hastata	Cottonwood	1
*Sedum Douglasii	Stonecrop	1
Tragopogon dubius	Goatsbeard	1
Verbascum Thapsus	Mullein	1
Veronica americana	American Brooklime	1
*Cirsium arvense	Canada Thistle	+

Station 35

Location and Description: Five miles upriver from damsite, south side, along Garfield County Road # 425. (Sec. 15, T. 13 N., R. 43 E.) Area encompassed abandoned farmland and farmhouse. Soil consisted mostly of sand and loam.

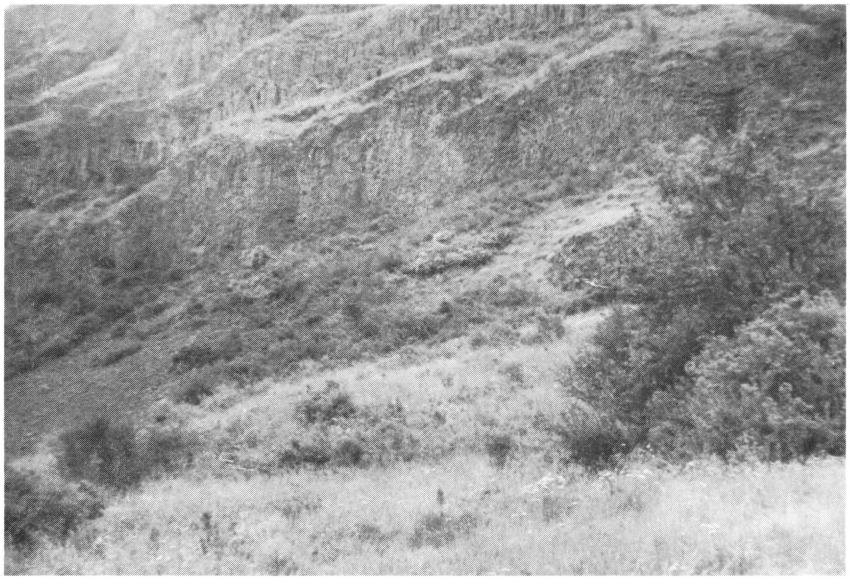
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Rumex Acetosella	Sheep Sorrel	4
*Acer Negundo	Box Elder	3
Agropyron spicatum	Blue Bunch Wheatgrass	3
Bromus sterilis	Bromegrass	3
Cynoglossum officinale	Hound's-Tongue	3
Erodium cicutarium	Filaree	3

Scientific Name	Common Name	Rating
Hordeum leporinum	Wall Barley	3
*Poa pratensis	Kentucky Bluegrass	3
Rhus radicans	Poison Ivy	3
Sisymbrium altissimum	Jim Hill Mustard	3
Artemisia dracunculus	Wormwood	2
Bromus brizaeformis	Rattlesnake Brome	2
*Chichorium Intybus	Chicory	2
Convolvulus arvensis	Morning Glory	2
Lactuca Scariola	Prickly Lettuce	2
Philadelphus Lewisii	Syringa	2
Prunus virginiana	Chokecherry	2
Verbascum Thapsus	Mullein	2
Achillea Millefolium	Yarrow	1
Amelanchier alnifolia	Service Berry	1
Clematis ligusticifolia	Clematis	1
Equisetum hyemale	Scouring-rush	1
*Eriogonum heracleoides	Eriogonum	1
Holodiscus discolor	Ocean Spray	1
Lomatium dissectum	Lomatium	1
*Prunus Persica	Cultivated Peach	1
*Pyrus malus	Cultivated Apple	1
Ribes aureum	Golden Currant	1
Rhamnus Purshiana	Chittam Bark	1
Rosa species	Cultivated Rose	1
Rosa Woodsii	Wild Rose	1

Scientific Name	Common Name	Rating
*Rubus ursinus	Blackberry	1
*Salix caudata	Willow	1
Sambucus glauca	Blue Elderberry	1
*Saponaria officinalis	Bouncing Bet	1
Stellaria media	Common Chickweed	1
Urtica gracilis	Nettle	1
*Acer saccharinum	Silver Maple	+
*Aesculus Hippocastanum	Common Horse-Chestnut	+
*Artemisia ludoviciana	Sagebrush	+
*Castanea mollissima	Chinese Chestnut	+
Elymus cinereus	Ryegrass	+
*Iris species	Cultivated Iris	+
Medicago sativa	Alfalfa	+
*Parthenocissus quinquefolia	Virginia Creeper	+
*Picea Engelmannii	Engelmann Spruce	+
*Spirea trichocarpa	Spirea	+
*Syringa vulgaris	Lilac	+
*Thuja orientalis	Oriental Arbor-Vitae	+



Location and Description: Six miles upriver from damsite, south side, along Garfield County Road # 425. (Sec. 14, T. 13 N., R. 43 E.) Area encompassed the steep south slopes and abandoned farmland. Soil consisted mostly of sandy loam and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Poa pratensis	Kentucky Bluegrass	4
Achillea Millefolium	Yarrow	3
Erodium cicutarium	Filaree	3
Hordeum leporinum	Wall Barley	3
*Plantago Purshii	Plantain	3
Rhus glabra	Smooth Sumac	3
Rumex Acetosella	Sheep Sorrel	3

Scientific Name	Common Name	Rating
Sisymbrium altissimum	Jim Hill Mustard	3
Bromus brizaeformis	Rattlesnake Brome	2
Celtis Douglasii	Hackberry	2
Convolvulus arvensis	Morning Glory	2
Dipsacus sylvestris	Wild Teasel	2
Gaillardia aristata	Blanket Flower	2
Lactuca Scariola	Prickly Lettuce	2
Lupinus sericeus	Lupine	2
Onopordum Acanthium	Scotch Thistle	2
Phacelia leucophylla	Phacelia	2
Rosa Woodsii	Wild Rose	2
Rumex crispus	Yellow Dock	2
Taraxacum officinale	Dandelion	2
Verbascum Blattaria	Moth Mullein	2
Vicia villosa	Hairy Vetch	2
Amelanchier alnifolia	Service Berry	1
Asclepias speciosa	Milkweed	1
Circium undulatum	Thistle	1
Clematis ligusticifolia	Clematis	1
Crataegus Douglasii	Black Hawthorn	1
Eriogonum niveum	Canyon Heather	1
Holodiscus discolor	Ocean Spray	1
Medicago sativa	Alfalfa	1
Mimulus guttatus	Monkey Flower	1
Philadelphus Lewisii	Syringa	1

Scientific Name	Common Name	Rating
Rhus radicans	Poison Ivy	1
Sedum Douglasii	Stonecrop	1
Tragopogon dubius	Goatsbeard	1
Ribes aureum	Golden Currant	+

Station 37

Location and Description: Seven miles upriver from damsite, south side, along Garfield County Road # 425. (Sec. 24, T. 13 N., R. 43 E.) Area encompassed the steep south slopes which continued to highway located near riverbank. Soil consisted mostly of sandy loam and rock.

Abundance Values Assigned to Plants Collected and Identified

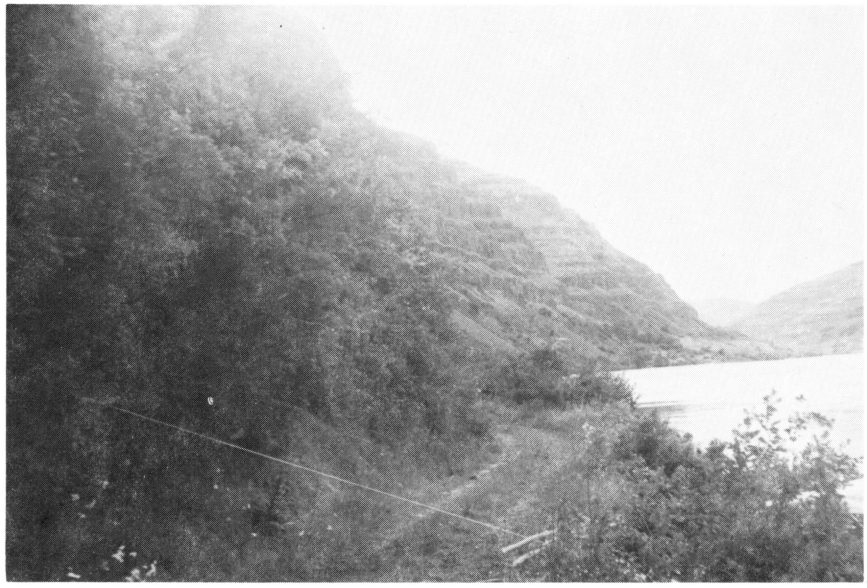
(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Poa pratensis	Kentucky Bluegrass	4
Achillea Millefolium	Yarrow	3
Bromus sterilis	Bromegrass	3
*Eriogonum heracleoides	Eriogonum	3
*Geranium viscosissimum	Wild Geranium	3
Hordeum leporinum	Wall Barley	3
Rhus radicans	Poison Ivy	3

Scientific Name	Common Name	Rating
Rosa Woodsii	Wild Rose	3
Sisymbrium altissimum	Jim Hill Mustard	3
Vicia villosa	Hairy Vetch	3
Agropyron spicatum	Blue Bunch Wheatgrass	2
Bromus brizaeformis	Rattlesnake Brome	2
*Cirsium undulatum	Thistle	2
Clematis ligusticifolia	Clematis	2
Crataegus Douglasii	Black Hawthorn	2
Holodiscus discolor	Ocean Spray	2
Lupinus sericeus	Lupine	2
Philadelphus Lewisii	Syringa	2
*Phlox longifolia	Phlox	2
Rhus glabra	Smooth Sumac	2
Ribes aureum	Golden Currant	2
Rumex crispus	Yellow Dock	2
Amelanchier alnifolia	Service Berry	1
Balsamorhiza sagittata	Balsam-Root	1
Celtis Douglasii	Hackberry	1
Cynoglossum officinale	Hound's-Tongue	1
Elymus cinereus	Ryegrass	1
*Equisetum hyemale	Scouring-rush	1
Erysimum asperum	Western Wallflower	1
Gaillardia aristata	Blanket Flower	1
Lomatium dissectum	Lomatium	1
Rumex Acetosella	Sheep Sorrel	1

Scientific Name	Common Name	Rating
Symphoricarpos rivularis	Snowberry	1
Tragopogon dubius	Goatsbeard	1
Urtica gracilis	Nettle	1
Cirsium vulgare	Bull Thistle	+
*Pyrus communis	Cultivated Pear	+

Station 38



Location and Description: Two miles upriver from Granite Point, south side, along Garfield County Road # 425. (Sec. 25, T. 13 N., R. 43 E.) Area encompassed the steep south slopes which continued to highway located near riverbank. Soil consisted mostly of sandy loam and rock.

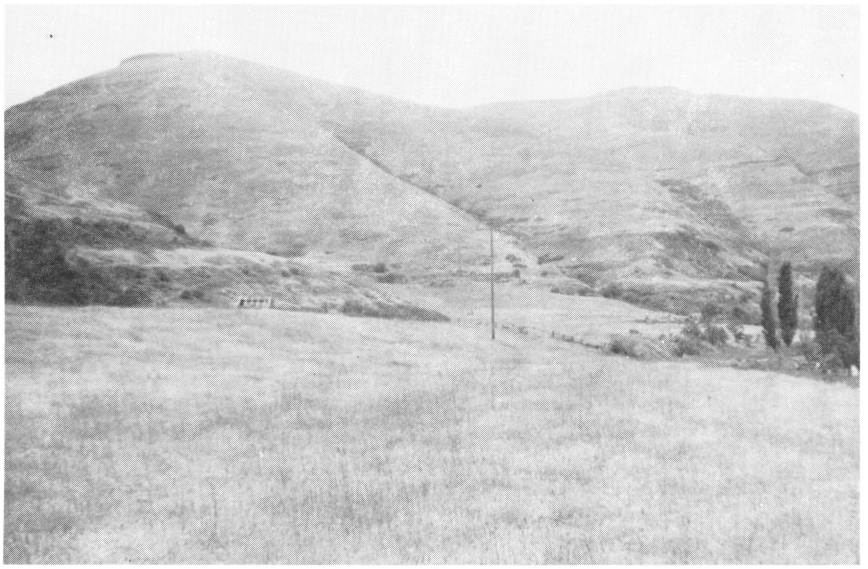
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Agropyron spicatum	Blue Bunch Wheatgrass	3
Bromus rigidus	Ripgut	3
Celtis Douglasii	Hackberry	3
Crataegus Douglasii	Black Hawthorn	3
*Elymus glaucus	Smooth Wild Rye	3

Scientific Name	Common Name	Rating
Hordeum leporinum	Wall Barley	3
Medicago lupulina	Black Medic	3
Melilotus officinalis	Yellow Melilot	3
Onopordum Acanthium	Scotch Thistle	3
Philadelphus Lewisii	Syringa	3
Poa nervosa	Bluegrass	3
Poa pratensis	Kentucky Bluegrass	3
*Prunus virginiana	Chokecherry	3
Rhus radicans	Poison Ivy	3
Ribes aureum	Golden Currant	3
Rosa Woodsii	Wild Rose	3
*Rumex Acetosella	Sheep Sorrel	3
Sambucus glauca	Blue Elderberry	3
Sisymbrium altissimum	Jim Hill Mustard	3
Tragopogon dubius	Goatsbeard	3
Artemisia Leibergii	Sagebrush	2
Artemisia ludoviciana	Sagebrush	2
*Cerastium arvense	Field Chickweed	2
Conium maculatum	Poison Hemlock	2
Cynoglossum officinale	Hound's-Tongue	2
*Festuca occidentalis	Fescue	2
*Hypericum perforatum	Common St. Johnswort	2
Phacelia leucophylla	Phacelia	2
Urtica gracilis	Nettle	2
Verbascum Thapsus	Mullein	2

Scientific Name	Common Name	Rating
Vicia villosa	Hairy Vetch	2
Asclepias speciosa	Milkweed	1
*Aster species	Aster	1
Bromus brizaeformis	Rattlesnake Brome	1
*Claytonia arenicola	Claytonia	1
Claytonia perfoliata	Miner's Lettuce	1
Equisetum hyemale	Scouring-rush	1
*Eriogonum heracleoides	Eriogonum	1
Erysium asperum	Western Wallflower	1
*Lomatium triternatum	Lomatium	1
Penstemon triphyllus	Beard-Tongue	1
*Sedum Douglasii	Stonecrop	1
Sphaeralcea rivularis	Maple-leaved Mallow	1
Stellaria media	Common Chickweed	1
*Symphoricarpos rivularis	Snowberry	1
Verbena bracteata	Vervain	1
Ailanthus altissima	Tree of Heaven	+
*Clarkia pulchella	Deer Horn	+
*Taraxacum officinale	Dandelion	+



Location and Description: Three miles upriver from Granite Point, south side, along Garfield County Road # 425. (Sec. 30, T. 13 N., R. 44 E.) Area encompassed south slopes and abandoned farmland.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Hordeum leporinum	Wall Barley	4
*Secale cereale	Rye	4
Bromus rigidus	Ripgut	3
Sisymbrium altissimum	Jim Hill Mustard	3
Lactuca Scariola	Prickly Lettuce	2
Populus nigra	Lombardy Poplar	2
Asparagus officinalis	Asparagus	1

Scientific Name	Common Name	Rating
Celtis Douglasii	Hackberry	1
Elymus glaucus	Smooth Wild Rye	1
Erodium cicutarium	Filaree	1
Onopordum Acanthium	Scotch Thistle	1
Rosa Woodsii	Wild Rose	1
Sambucus glauca	Blue Elderberry	1
Urtica gracilis	Nettle	1
Salix exigua	Willow	+
*Ulmus parvifolia	Chinese Elm	+

Station 40

Location and Description: Four miles upriver from Granite Point, south side, along Garfield County Road # 425. (Sec. 29, T. 13 N., R. 44 E.) Area encompassed south slopes and abandoned farmland. Soil consisted mostly of sandy loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Hordeum leporinum	Wall Barley	4
Triticum aestivum	Common Wheat	4
Elymus glaucus	Smooth Wild Rye	3
Sisymbrium altissimum	Jim Hill Mustard	3
*Astragalus arrectus	Milk Vetch	1
Stellaria media	Common Chickweed	1

Scientific Name	Common Name	Rating
Tragopogon dubius	Goatsbeard	1
Vicia villosa	Hairy Vetch	1
Amsinckia retrorsa	Tar Weed	+
Bromus sterilis	Bromegrass	+
Celtis Douglasii	Hackberry	+
Prunus virginiana	Chokecherry	+
Rosa Woodsii	Wild Rose	+
Ulmus parvifolia	Chinese Elm	+

Station 41

Location and Description: Across the Snake River, south side, from Bishop Railroad Station along Garfield County Road # 425. (Sec. 28, T. 13 N., R. 44 E.) Area encompassed steep rocky slopes and county road which is located near river. Soil consisted mostly of sand and rock.

Abundance Values Assigned to Plants Collected and Identified

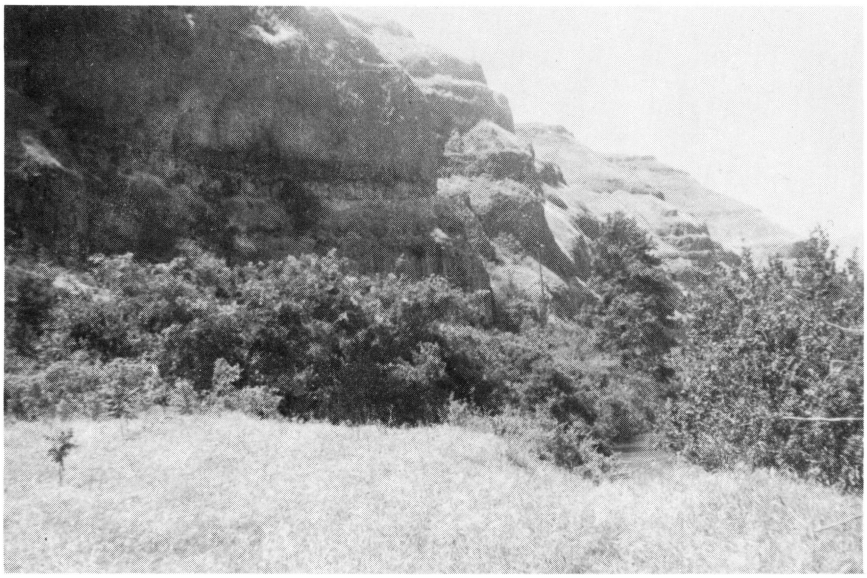
(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Agropyron spicatum	Blue Bunch Wheatgrass	3
Bromus brizaeformis	Rattlesnake Brome	3
Vicia villosa	Hairy Vetch	3
Artemisia dracunculus	Wormwood	2

Scientific Name	Common Name	Rating
Artemisia ludoviciana	Sagebrush	2
Dipsacus sylvestris	Wild Teasel	2
Elymus cinereus	Ryegrass	2
Eriogonum heracleoides	Eriogonum	2
Eriogonum niveum	Canyon Heather	2
Geranium viscosissimum	Geranium	2
Hypericum perforatum	Common St. Johnswort	2
Lomatium dissectum	Lomatium	2
Phacelia leucophylla	Phacelia	2
Poa pratensis	Kentucky Bluegrass	2
Rhus radicans	Poison Ivy	2
Rosa Woodsii	Wild Rose	2
Tragopogon dubius	Goatsbeard	2
Amelanchier alnifolia	Service Berry	1
Apocynum cannabinum	Smooth Indian Hemp	1
Asparagus officinalis	Asparagus	1
Balsamorhiza sagittata	Balsam-Root	1
Celtis Douglasii	Hackberry	1
Cirsium arvense	Canada Thistle	1
Clematis ligusticifolia	Clematis	1
Gaillardia aristata	Blanket Flower	1
*Glycyrrhiza lepidota	Wild Licorice	1
*Heuchera cylindrica	Alum Root	1
Lactuca Scariola	Prickly Lettuce	1
Lupinus sericeus	Lupine	1

Scientific Name	Common Name	Rating
Melilotus officinalis	Yellow Melilot	1
Philadelphus Lewisii	Syringa	1
Prunus virginiana	Chokecherry	1
Rhus glabra	Smooth Sumac	1
Rumex crispus	Yellow Dock	1
Sedum Douglasii	Stonecrop	1
Solidago gigantea	Goldenrod	1
Solidago species	Goldenrod	1
Verbascum Blattaria	Moth Mullein	1
*Conyza canadensis	Horseweed	+
*Stephanomeria tenuifolia	Flowering Straw	+

Station 42



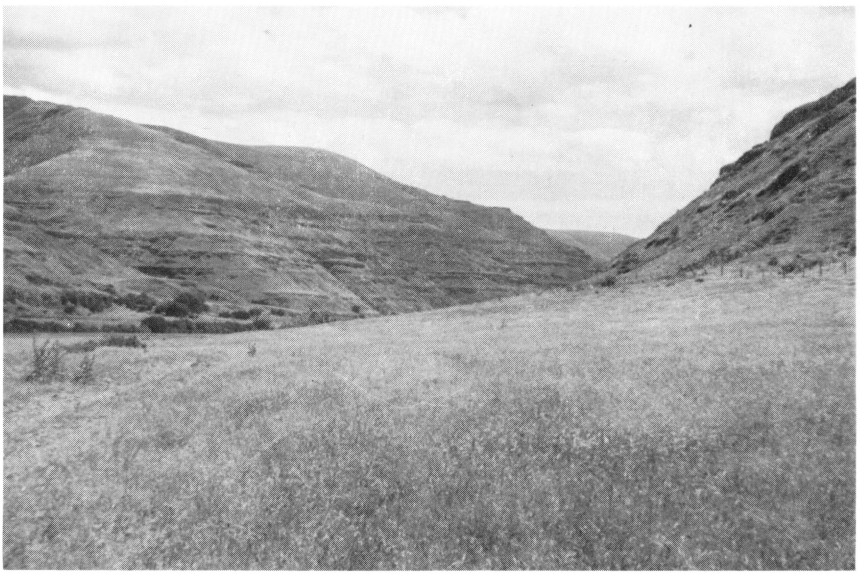
Location and Description: One mile upriver, south side, from Bishop Railroad Station along Garfield County Road # 425. (Sec. 33, T. 13 N., R. 44 E.) Area encompassed the steep rocky south slopes and a small bench area. Soil consisted mostly of sand and rock mixed with some loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Celtis Douglasii	Hackberry	3
Crataegus Douglasii	Black Hawthorn	3
Hordeum leporinum	Wall Barley	3
Marrubium vulgare	Common Horehound	3

Scientific Name	Common Name	Rating
*Poa compressa	Canada Bluegrass	3
Ribes aureum	Golden Currant	3
Sisymbrium altissimum	Jim Hill Mustard	3
Onopordum Acanthium	Scotch Thistle	2
Prunus virginiana	Chokecherry	2
Rhus glabra	Smooth Sumac	2
Rhus radicans	Poison Ivy	2
Urtica gracilis	Nettle	2
Clematis ligusticifolia	Clematis	1
Elymus cinereus	Ryegrass	1
Equisetum hyemale	Scouring-rush	1
*Onothera Hookeri	Evening Primrose	1
Rosa Woodsii	Wild Rose	1
Sambucus glauca	Blue Elderberry	1
Verbascum Blattaria	Moth Mullein	1
Verbascum Thapsus	Mullein	1
Pinus ponderosa	Ponderosa Pine	+
*Potentilla recta	Cinquefoil	+
*Prunus species	Stone-Fruits	+



Location and Description: Two miles upriver, south side, from Bishop Railroad Station along Garfield County Road # 425. (Sec. 2, T. 12 N., R. 44 E.) Area encompassed steep rocky south slopes and a small bench area, abandoned farmland. Soil consisted mostly of sandy loam and large rocks.

Abundance Values Assigned to Plants Identified

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Hordeum leporinum	Wall Barley	3
Onopordum Acanthium	Scotch Thistle	3
Vicia villosa	Hairy Vetch	3
Achillea Millefolium	Yarrow	2
Amsinckia retrorsa	Tar Weed	2

Scientific Name	Common Name	Rating
Helianthus annuus	Common Sunflower	2
Sisymbrium altissimum	Jim Hill Mustard	2
Artemisia dracunculus	Wormwood	1
Erodium cicutarium	Filaree	1
Rumex venosus	Sand Dock	1
Verbascum Thapsus	Mullein	1
Salix exigua	Willow	+

Station 44

Location and Description: Three miles upriver, south side, from Bishop Railroad Station along Garfield County Road # 425. (Sec. 11, T. 12 N., R. 44 E.) Area encompassed steep rocky south slopes. Soil consisted mostly of sandy loam mixed with large rocks.

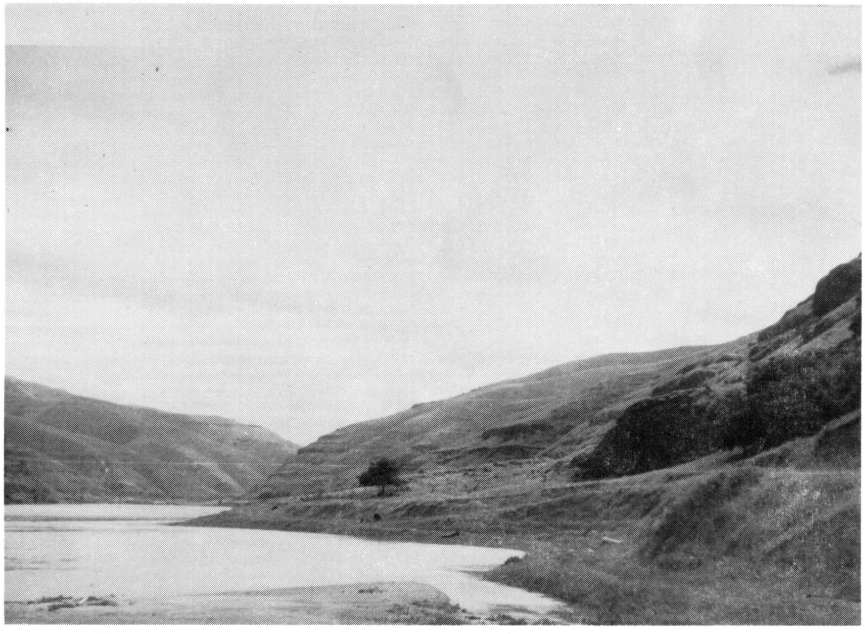
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Hordeum leporinum	Wall Barley	3
Onopordum Acanthium	Scotch Thistle	3
Rhus glabra	Smooth Sumac	3
Sisymbrium altissimum	Jim Hill Mustard	3
Vicia villosa	Hairy Vetch	3

Scientific Name	Common Name	Rating
Celtis Douglasii	Hackberry	2
Lepidium perfoliatum	Perfoliate Peppergrass	2
Chrysothamnus nauseosus	Rabbit Brush	1
Gaillardia aristata	Blanket Flower	1
Lepidium virginicum	Peppergrass	1
Rumex venosus	Sand Dock	1
*Salix caudata	Willow	1
Tragopogon dubius	Goatsbeard	1
Phlox longifolia	Phlox	+

Station 45



Location and Description: Four miles upriver, south side, from Bishop Railroad Station along Garfield County Road # 425. (Sec. 13, T. 12 N., R. 44 E.) Area encompassed steep rocky south slopes. Soil consisted mostly of sandy loam mixed with large rocks.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Bromus brizaeformis	Rattlesnake Brome	3
Erodium cicutarium	Filaree	3
Franseria acanthicarpa	Sand Bur	3
Hordeum leporinum	Wall Barley	3
*Iva axillaris	Poverty Weed	3

Scientific Name	Common Name	Rating
*Onopordum Acanthium	Scotch Thistle	3
Sisymbrium altissimum	Jim Hill Mustard	3
Agropyron spicatum	Blue Bunch Wheatgrass	2
Helianthus annuus	Common Sunflower	2
Lepidium virginicum	Peppergrass	2
Lupinus sericeus	Lupine	2
Plantago Purshii	Plantain	2
Tragopogon dubius	Goatsbeard	2
Celtis Douglasii	Hackberry	1
Gaillardia aristata	Blanket Flower	1
Hypericum perforatum	Common St. Johnswort	1
Lupinus sulphureus	Lupine	1
*Polygonum aviculare	Knotweed	1
Rhus glabra	Smooth Sumac	1
Scuttellaria angustifolia	Skullcap	1
*Tribulus terrestris	Puncture Vine	1
Verbascum Blattaria	Moth Mullein	1

Station 46

Location and Description: Five miles upriver, south side, from Bishop Railroad Station along Garfield County Road # 425. (Sec. 24, T. 12 N., R. 44 E.) Area encompassed the mouth of Foster Creek Canyon and a bench area which was mostly abandoned farmland. Soil consisted mostly of sandy loam mixed with some rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Celtis Douglasii	Hackberry	3
Cichorium Intybus	Chicory	3
Crataegus Douglasii	Black Hawthorn	3
Erodium cicutarium	Filaree	3

Scientific Name	Common Name	Rating
Hordeum leporinum	Wall Barley	3
Lepidium virginicum	Peppergrass	3
Onopordum Acanthium	Scotch Thistle	3
Sisymbrium altissimum	Jim Hill Mustard	3
*Sisymbrium officinale	Hedge Mustard	3
Helianthus annuus	Common Sunflower	2
Sambucus glauca	Blue Elderberry	2
Iva axillaris	Poverty Weed	1
Rhus glabra	Smooth Sumac	1
Robinia Pseudo-Acacia	Black Locust	1
Morus alba	White Mulberry	+

Station 47

Location and Description: Six miles upriver, south side, from Bishop Railroad Station along Garfield County Road # 425. (Sec. 25, T. 12 N., R. 44 E.) Area encompassed steep south slopes and abandoned farmland. Soil consisted mostly of sandy loam mixed with rock.

Abundance Values Assigned to Plants Identified

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Amsinckia retrorsa	Tar Weed	3
Erodium cicutarium	Filaree	3
Franseria acanthicarpa	Sand Bur	3
Helianthus annuus	Common Sunflower	3
Onopordum Acanthium	Scotch Thistle	3
Plantago Purshii	Plantain	3

Scientific Name	Common Name	Rating
Sisymbrium altissimum	Jim Hill Mustard	3
Sporobolus cryptandrus	Drop-seed	3
Chrysothamnus nauseosus	Rabbit Brush	2
Lepidium perfoliatum	Perfoliate Peppergrass	2
Medicago lupulina	Black Medic	2
Rhus glabra	Smooth Sumac	2
Rumex crispus	Yellow Dock	2
Vicia villosa	Hairy Vetch	2
Celtis Douglasii	Hackberry	1
Medicago sativa	Alfalfa	1
Robinia Pseudo-Acacia	Black Locust	1
Salsola pestifer	Russian Thistle	1

Location and Description: Seven miles upriver, south side, from Bishop Railroad Station along Garfield County Road # 425. (Sec. 36, T. 12 N., R. 44 E.) Area encompassed the steep south slopes. Soil consisted mostly of sandy loam and rock.

Abundance Values Assigned to Plants Identified

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Agropyron spicatum	Blue Bunch Wheatgrass	3
Chrysothamnus nauseosus	Rabbit Brush	3
Erodium cicutarium	Filaree	3
Helianthus annuus	Common Sunflower	3
Hordeum leporinum	Wall Barley	3

Scientific Name	Common Name	Rating
Lupinus sericeus	Lupine	3
Onopordum Acanthium	Scotch Thistle	3
Sisymbrium altissimum	Jim Hill Mustard	3
Sisymbrium officinale	Hedge Mustard	3
Ailanthus altissima	Tree of Heaven	2
Bromus brizaeformis	Rattlesnake Brome	2
Celtis Douglasii	Hackberry	2
Medicago lupulina	Black Medic	2
Verbena bracteata	Vervain	2
Opuntia polyacantha	Prickly Pear	1
Rhus radicans	Poison Ivy	1
Robinia Pseudo-Acacia	Black Locust	1
Tragopogon dubius	Goatsbeard	1
Verbascum Blattaria	Moth Mullein	1
Rosa Woodsii	Wild Rose	+
Sambucus glauca	Blue Elderberry	+

Location and Description: Two miles downriver from Steptoe Canyon, south side, along Garfield County Road # 425. (Sec. 1, T. 11 N., R. 44 E.) Area encompassed the steep south slopes. Soil consisted mostly of sandy loam and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus rigidus	Ripgut	4
Bromus tectorum	Cheatgrass	4
Chrysothamnus nauseosus	Rabbit Brush	4
Achillea Millefolium	Yarrow	3
Agropyron spicatum	Blue Bunch Wheatgrass	3
Celtis Douglasii	Hackberry	3
Erodium cicutarium	Filaree	3

Scientific Name	Common Name	Rating
Helianthus annuus	Common Sunflower	3
Hordeum leporinum	Wall Barley	3
Melilotus officinalis	Yellow Melilot	3
Onopordum Acanthium	Scotch Thistle	3
Sisymbrium altissimum	Jim Hill Mustard	3
Vicia villosa	Hairy Vetch	3
Amsinckia retrorsa	Tar Weed	2
*Artemisia ludoviciana	Sagebrush	2
Bromus brizaeformis	Rattlesnake Brome	2
*Cichorium Intybus	Chicory	2
Clematis ligusticifolia	Clematis	2
Lactuca Scariola	Prickly Lettuce	2
Mimulus guttatus	Monkey Flower	2
Opuntia polyacantha	Prickly Pear	2
Rhus glabra	Smooth Sumac	2
Rumex crispus	Yellow Dock	2
Rumex venosus	Sand Dock	2
Sambucus glauca	Blue Elderberry	2
Tragopogon dubius	Goatsbeard	2
Veronica americana	American Brooklime	2
Artemisia dracunculus	Wormwood	1
Cirsium vulgare	Bull Thistle	1
*Collomia grandiflora	Collomia	1
Eriogonum niveum	Canyon Heather	1
Erysimum asperum	Western Wallflower	1

Scientific Name	Common Name	Rating
Phacelia leucophylla	Phacelia	1
Polygonum aviculare	Knotweed	1
Rhus radicans	Poison Ivy	1
Rosa Woodsii	Wild Rose	1
Salix caudata	Willow	1
*Scuttellaria angustifolia	Skullcap	1
Thelypodium laciniatum	Thelypodium	1
Urtica gracilis	Nettle	1
*Artemisia tridentata	Sagebrush	+
Asclepias speciosa	Milkweed	+
Asparagus officinalis	Asparagus	+
*Betula occidentalis	Spring Birch	+
Philadelphus Lewisii	Syringa	+
Prunus virginiana	Chokecherry	+
Ribes aureum	Golden Currant	+

Station 50

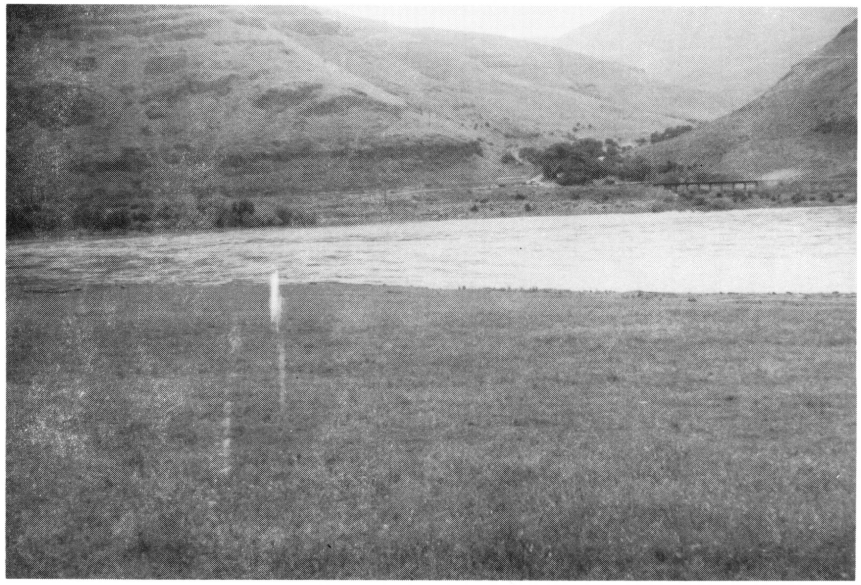
Location and Description: One mile downriver from Steptoe Canyon, south side, along Garfield County Road # 425. (Sec. 6, T. 11 N., R. 45 E.) Area encompassed south slopes and a bench area, abandoned farmland. Soil consisted of mostly sandy loam mixed with some rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Sisymbrium altissimum	Jim Hill Mustard	4
Capsella Bursa-pastoris	Shepherd's Purse	3
Erodium cicutarium	Filaree	3
Hordeum leporinum	Wall Barley	3
Poa pratensis	Kentucky Bluegrass	3
Achillea Millefolium	Yarrow	2
Bromus brizaeformis	Rattlesnake Brome	2

Scientific Name	Common Name	Rating
Bromus sterilis	Bromograss	2
Chrysothamnus nauseosus	Rabbit Brush	2
Helianthus annuus	Common Sunflower	2
Lactuca Scariola	Prickly Lettuce	2
Lepidium virginicum	Peppergrass	2
Rumex Acetosella	Sheep Sorrel	2
Sporobolus cryptandrus	Drop-seed	2
Taraxacum officinale	Dandelion	2
Amsinckia retrorsa	Tar Weed	1
*Chrysothamnus viscidiflorus	Rabbit Brush	1
Plantago Purshii	Plantain	1
Stellaria media	Common Chickweed	1
Celtis Douglasii	Hackberry	+
Claytonia perfoliata	Miner's Lettuce	+
Medicago sativa	Alfalfa	+
Vicia villosa	Hairy Vetch	+



Location and Description: Across the Snake River from Steptoe Canyon, south side, along Garfield County Road # 425. (Sec. 7, T. 11 N., R. 45 E.) Area encompassed the south slopes and a bench area, abandoned farmland. Soil consisted mostly of sandy loam mixed with some rock.

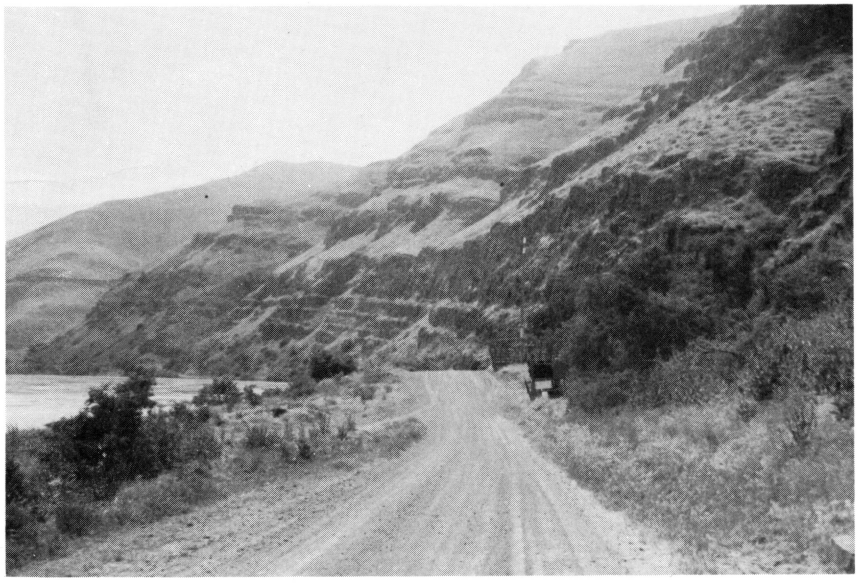
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Achillea Millefolium	Yarrow	3
Chrysothamnus nauseosus	Rabbit Brush	3
Erodium cicutarium	Filaree	3
Hordeum leporinum	Wall Barley	3
Lepidium perfoliatum	Perfoliate Peppergrass	3
*Lepidium virginicum	Peppergrass	3
Onopordum Acanthium	Scotch Thistle	3

Scientific Name	Common Name	Rating
Sisymbrium altissimum	Jim Hill Mustard	3
Sporobolus cryptandrus	Drop-seed	3
Bromus brizaeformis	Rattlesnake Brome	2
Bromus rigidus	Ripgut	2
Helianthus annuus	Common Sunflower	2
Lactuca Scariola	Prickly Lettuce	2
Medicago lupulina	Black Medic	2
Salsola pestifer	Russian Thistle	2
Plantago Purshii	Plantain	1
Celtis Douglasii	Hackberry	+
Medicago sativa	Alfalfa	+
Sambucus glauca	Blue Elderberry	+

Station 52



Location and Description: One mile upriver from Steptoe Canyon, south side, along Garfield County Road # 425. (Sec. 18, T. 11 N., R. 45 E.) Area encompassed steep south slopes and county road. Soil consisted mostly of sandy loam and rock.

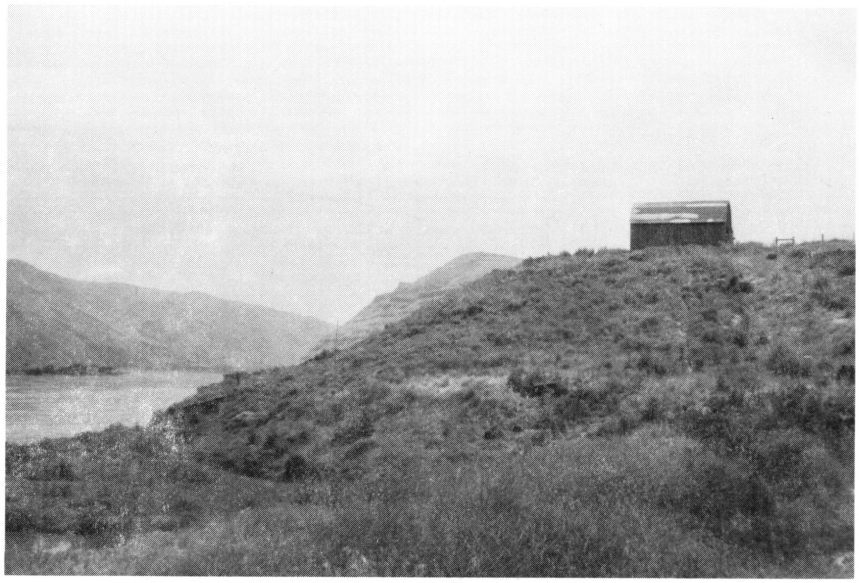
Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Bromus rigidus	Ripgut	3
Erodium cicutarium	Filaree	3
Hordeum leporinum	Wall Barley	3
Lepidium virginicum	Peppergrass	3
Onopordum Acanthium	Scotch Thistle	3
Poa bulbosa	Bulbous Bluegrass	3
Sisymbrium altissimum	Jim Hill Mustard	3

Scientific Name	Common Name	Rating
Verbascum Thapsus	Mullein	3
Achillea Millefolium	Yarrow	2
Chrysothamnus nauseosus	Rabbit Brush	2
Dipsacus sylvestris	Wild Teasel	2
Lactuca Scariola	Prickly Lettuce	2
Rhus radicans	Poison Ivy	2
Rumex crispus	Yellow Dock	2
Stellaria media	Common Chickweed	2
Tragopogon dubius	Goatsbeard	2
Agropyron spicatum	Blue Bunch Wheatgrass	1
*Artemisia ludoviciana	Sagebrush	1
Bromus brizaeformis	Rattlesnake Brome	1
Celtis Douglasii	Hackberry	1
*Cichorium Intybus	Chicory	1
Clematis ligisticifolia	Clematis	1
Convolvulus arvensis	Morning Glory	1
Eriogonum species	Eriogonum	1
Marrubium vulgare	Common Horehound	1
Medicago lupulina	Black Medic	1
Philadelphus Lewisii	Syringa	1
Rhus glabra	Smooth Sumac	1
Ribes aureum	Golden Currant	1
Rosa Woodsii	Wild Rose	1
Scuttellaria angustifolia	Skullcap	1
*Sisymbrium officinale	Hedge Mustard	1
Sporobolus cryptandrus	Drop-seed	1

Scientific Name	Common Name	Rating
Urtica gracilis	Nettle	1
Veronica Americana	American Brooklime	1
Artemisia tridentata	Sagebrush	+
*Betula occidentalis	Spring Birch	+
Lomatium dissectum	Lomatium	+
Medicago sativa	Alfalfa	+
Morus alba	White Mulberry	+
Robinia Pseudo-Acacia	Black Locust	+



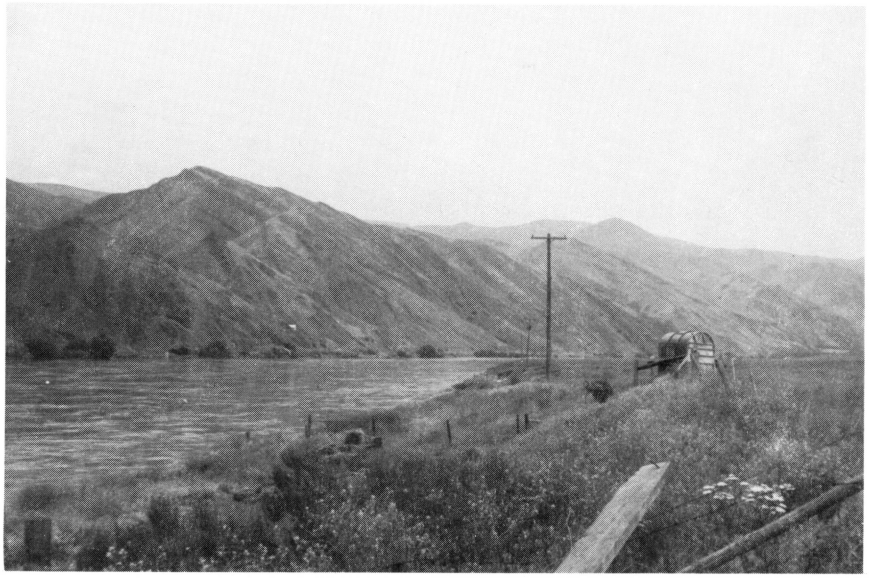
Location and Description: Two miles upriver from Steptoe Canyon, south side, along Garfield County Road # 425. (Sec. 19, T. 11 N., R. 45 E.) Land encompassed a large bench area which was abandoned farmland. Soil consisted mostly of sandy loam.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Helianthus annuus	Common Sunflower	4
Bromus rigidus	Ripgut	3
Onopordum Acanthium	Scotch Thistle	3
Sisymbrium altissimum	Jim Hill Mustard	3
Achillea Millefolium	Yarrow	2
Artemisia tridentata	Sagebrush	2

Scientific Name	Common Name	Rating
Chenopodium album	Lamb's Quarters	2
Conium maculatum	Poison Hemlock	2
Hordeum leporinum	Wall Barley	2
Rumex crispus	Yellow Dock	2
Salix caudata	Willow	2
Solidago gigantea	Goldenrod	2
Urtica gracilis	Nettle	2
Vicia villosa	Hairy Vetch	2
Acer saccharinum	Silver Maple	1
Celtis Douglasii	Hackberry	1
Glycyrrhiza lepidota	Wild Licorice	1
*Iva axillaris	Poverty Weed	1
Melilotus officinalis	Yellow Melilot	1
Populus nigra	Lombardy Poplar	1
Rhus radicans	Poison Ivy	1
Rosa Woodsii	Wild Rose	1
Salix exigua	Willow	1
Ribes aureum	Golden Currant	+
*Tribulus terrestris	Puncture Vine	+



Location and Description: South Side of Snake River near the Silcott-Washington State Highway # 12 junction. (Sec. 20, T. 11 N., R. 45 E.) Area encompassed mostly farmland. Soil consisted of sand and loam. The Silcott Area was once an Indian Camp, later it contained orchards which were removed about two years prior to this vegetation study.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Sisymbrium altissimum	Jim Hill Mustard	4
Achillea Millefolium	Yarrow	3
Bromus rigidus	Ripgut	3
Lactuca Scariola	Prickly Lettuce	3
Lepidium virginicum	Peppergrass	3
*Poa Nervosa	Bluegrass	3

Scientific Name	Common Name	Rating
Amsinckia retrorsa	Tar Weed	2
Chenopodium album	Lamb's Quarters	2
Chrysothamnus nauseosus	Rabbit Brush	2
Erodium cicutarium	Filaree	2
Lepidium perfoliatum	Perfoliate Peppergrass	2
Plantago Purshii	Plantain	2
Salsola pestifer	Russian Thistle	2
Agropyron spicatum	Blue Bunch Wheatgrass	1
Artemisia dracunculus	Wormwood	1
Medicago sativa	Alfalfa	1
Sporobolus cryptandrus	Drop-seed	1
Tragopogon dubius	Goatsbeard	1
Vicia villosa	Hairy Vetch	1
*Agropyron cristatum	Crested Wheatgrass	+

Station 55

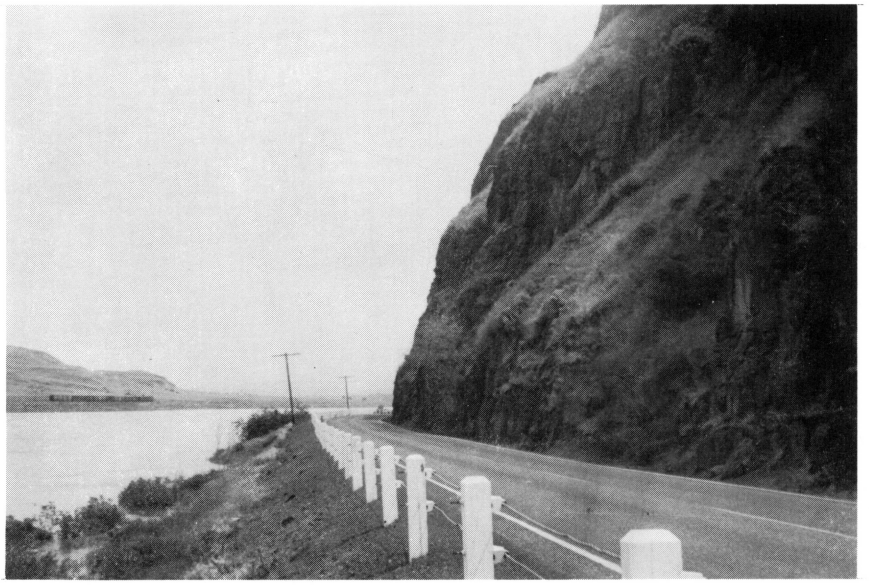
Location and Description: One mile upriver, south side, from Silcott along Washington State Highway # 12. (Sec. 21, T. 11 N., R. 45 E.) Land encompassed the dry river bed and highway fill. Soil consisted mostly of sand, gravel and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
*Chrysopsis hispida	Golden Aster	3
Erodium cicutarium	Filaree	3
Plantago Purshii	Plantain	3
Sisymbrium altissimum	Jim Hill Mustard	3
Sporobolus cryptandrus	Drop-seed	3
Achillea Millefolium	Yarrow	2
Bromus sterilis	Bromegrass	2

Scientific Name	Common Name	Rating
Iva axillaria	Poverty Weed	2
Medicago lupulina	Black Medic	2
Melilotus officinalis	Yellow Melilot	2
Agropyron spicatum	Blue Bunch Wheatgrass	1
Artemisia dracunculus	Wormwood	1
Elymus glaucus	Smooth Wild Rye	1
Gaillardia aristata	Blanket Flower	1
Helianthus annuus	Common Sunflower	1
Lomatium dissectum	Lomatium	1
Onopordum Acanthium	Scotch Thistle	1
Poa pratensis	Kentucky Bluegrass	1
Tragopogon dubius	Goatsbeard	1
Vicia villosa	Hairy Vetch	1
Epilobium paniculatum	Willow Herb	+



Location and Description: Two miles upriver, south side, from Silcott along Washington State Highway # 12. (Sec. 15, T. 11 N., R. 45 E.) Land encompassed a deep highway cut and gravel highway fill, which continued to riverbank. Soil consisted mostly of gravel and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
Bromus sterilis	Bromegrass	3
*Anthriscus scandicina	Chervil	2
Clematis ligusticifolia	Clematis	2
Poa pratensis	Kentucky Bluegrass	2
Achillea Millefolium	Yarrow	1
Amsinckia retrorsa	Tar Weed	1

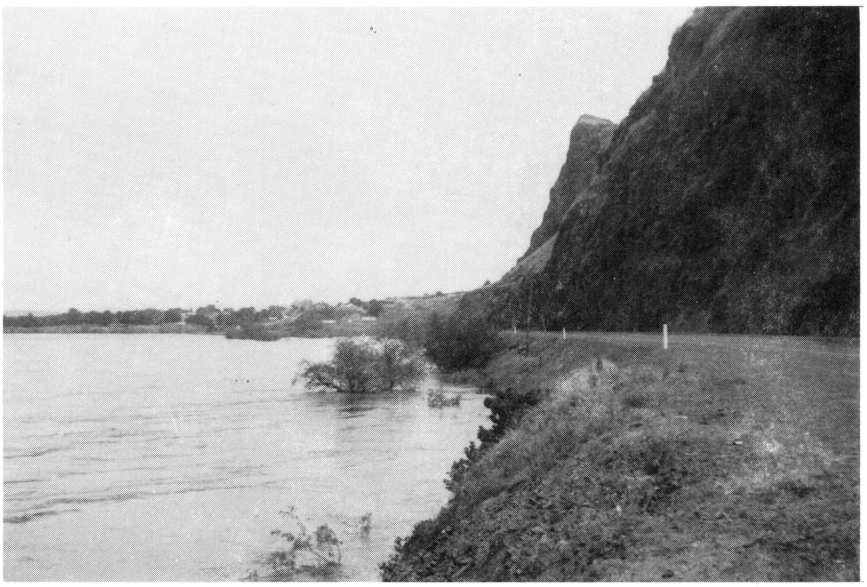
Scientific Name	Common Name	Rating
Asclepias speciosa	Milkweed	1
Elymus glaucus	Smooth Wild Rye	1
Equisetum hyemale	Scouring-rush	1
Helianthus annuus	Common Sunflower	1
Onopordum Acanthium	Scotch Thistle	1
Rhus radicans	Poison Ivy	1
Rosa Woodsii	Wild Rose	1
Salix exigua	Willow	1
Salsola pestifer	Russian Thistle	1
Solidago species	Goldenrod	1
Sporobolus cryptandrus	Drop-seed	1
Triticum aestivum	Common Wheat	1
Verbascum Thapsus	Mullein	1
Agropyron spicatum	Blue Bunch Wheatgrass	+
Arctium minus	Common Burdock	+
Celtis Douglasii	Hackberry	+
Crataegus Douglasii	Black Hawthorn	+
Stellaria media	Common Chickweed	+

Location and Description: Three miles upriver, south side, from Silcott along Washington State Highway # 12. (Sec. 23, T. 11 N., R. 45 E.) Land encompassed a deep highway cut and gravel highway fill which continued to riverbank. Soil consisted mostly of gravel and rock.

Abundance Values Assigned to Plants Identified

Scientific Name	Common Name	Rating
Agropyron spicatum	Blue Bunch Wheatgrass	3
Bromus sterilis	Bromegrass	3
Bromus tectorum	Cheatgrass	3
Hordeum leporinum	Wall Barley	3
Achillea Millefolium	Yarrow	2
Chrysothamnus nauseosus	Rabbit Brush	2
Anthriscus scandicina	Chervil	1
Artemisia dracunculus	Wormwood	1
Clematis ligusticifolia	Clematis	1

Scientific Name	Common Name	Rating
Elymus cinereus	Ryegrass	1
Lactuca Scariola	Prickly Lettuce	1
Poa pratensis	Kentucky Bluegrass	1
Rhus radicans	Poison Ivy	1
Rosa Woodsii	Wild Rose	1
Sedum Douglasii	Stonecrop	1
Tragopogon dubius	Goatsbeard	1
Verbascum Thapsus	Mullein	1
Asclepias speciosa	Milkweed	+
Crataegus Douglasii	Black Hawthorn	+
Robinia Pseudo-Acacia	Black Locust	+
Rumex crispus	Yellow Dock	+
Sisymbrium altissimum	Jim Hill Mustard	+
Triticum aestivum	Common Wheat	+



Location and Description: Approximately one mile downriver, south side, from Clarkston, Washington, along Washington State Highway # 12. (Sec. 23, T. 11 N., R. 45 E.) Land encompassed a deep highway cut and gravel highway fill which continued to riverbank. Soil consisted mostly of gravel and rock.

Abundance Values Assigned to Plants Collected and Identified

(Plants collected are so indicated by an asterisk)

Scientific Name	Common Name	Rating
Bromus tectorum	Cheatgrass	4
*Agropyron spicatum	Blue Bunch Wheatgrass	3
Bromus rigidus	Ripgut	3
Poa pratensis	Kentucky Bluegrass	2
*Apocynum cannabinum	Smooth Indian Hemp	1
Clematis ligusticifolia	Clematis	1
Equisetum hyemale	Scouring-rush	1

Scientific Name	Common Name	Rating
Galium Aparine	Bedstraw	1
Hordeum leporinum	Wall Barley	1
Rhus radicans	Poison Ivy	1
Rosa Woodsii	Wild Rose	1
Sedum Douglasii	Stonecrop	1
Verbascum Thapsus	Mullein	1
*Dactylis glomerata	Orchardgrass	+
Dipsacus sylvestris	Wild Teasel	+
Salix exigua	Willow	+