Archaeological Survey of Grand Coulee Dam National Recreation Area

Part 1: Lincoln County Above Normal Pool

by
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WASHINGTON STATE UNIVERSITY
LABORATORY OF ANTHROPOLOGY
REPORT OF INVESTIGATIONS NO. 38

Pullman
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ABSTRACT

A first phase has been completed of a survey of Lake Franklin D. Roosevelt, in northeastern Washington. During August, 1966, official records and photographs were studied, maps were collected or located, and approximately one hundred miles of shoreline in Lincoln County were inspected by automobile, boat, and on foot. Twenty sites were given numbers, an additional fourteen which were not in Lincoln County were reported, and several natural features were recorded.

Sites found through this survey have been discussed in relation to those found before the 1941 flooding. Prospects for finding additional sites during low water are estimated for various locations, and future work is recommended.

ACKNOWLEDGMENTS

Many people have been helpful in many ways during the time that we were making this study. Our thanks go to all of the informants who are listed in a separate section, and to the many people who gave us material help but are not listed with the informants.

There are a few people who should be singled out, however, because they gave us so much help that we could not have conducted the survey without them. In the National Park Service we would like to thank Mr. Homer Robinson, Superintendent of the Recreation Area, for his interest, understanding, and enthusiastic assistance. We could not have conducted the survey in the time allowed nor so successfully had it not been for the aid he gave. We would also like to thank Mr. Paul J. F. Schumacher, Regional Archaeologist, Western Region, for having seen the need for this survey, for making this study possible, and for having assisted us with his advice and encouragement. Finally, we should thank Mr. Tom Mutch, Chief of the Property Division of the Bureau of Reclamation office in Ephrata. He gave us both material assistance and information which has done much to insure the success of the work, and will be of great assistance to the rest of the survey.

The members of Mr. Robinson's staff were all very helpful and cooperative, and it has been a pleasure to work with them.

I. INTRODUCTION

Purpose of Study

This work was carried out under N. P. S. Purchase Order Contract No. 940-40 to Roderick Sprague, Department of Anthropology, Washington State University, Pullman, Washington.

The overall purpose of this survey of resources is to find archaeological sites and potential areas of interest within the recreation area, and to pinpoint specific areas where river action, or planned development or other activities of those living near the lake have created urgent need for salvage. Thus, this is both an attempt to assess the sources for future interpretation and study, and an inventory of sites where there is need of immediate work.

The fluctuating levels of the lake, discussed below, create an especial problem here. The sites located by this survey were all above 1290 feet, although some below that level were reported to us in such detail, or adequately visible on aerial photographs, so that we could be fairly specific about them. The most urgent needs for salvage exist below the normal lake level of 1290 feet. These are sites which are exposed during low water in the spring, and have been subject not only to water action, but to systematic depredation during the period of their exposure.

Description of Area

Coulee Dam National Recreation Area consists, in large part, of the surface of Franklin D. Roosevelt Lake, and the narrow strip of property confining the lake on its shores. This property is owned by the Bureau of Reclamation, but administered by the National Park Service. The lake is a backwater formed by the construction of Grand Coulee Dam. It was flooded in 1940 and 1941. The elevation of water at the dam is to be held at 1288.6 feet above sea level. For most mapping purposes this can be taken as 1290 feet. This level is not always maintained during the winter. (See the discussion below on water levels.) The lake is 145 miles long from Coulee Dam to the Canadian border, beyond which point the reservoir is only the original river depth. There are three arms off the main lake. The Sanpoil Arm, commencing at about river mile 18 and running north some ten miles; the Spokane River Arm, commencing at about river mile 41 and running east some thirty miles; and the Kettle River Arm, commencing at river mile 105, and running north approximately ten miles.

There are approximately 102,000 acres within the property boundaries. Approximately 24,000 acres or about 23½% was the bed and shore of original rivers. About 57,000 acres, or 56% was land inundated by the lake, and 21,000 acres, or about 20% is the freeboard, or area owned to enclose the lake, but not under the surface of the lake. Thus there is a total of approximately 80% or 81,000 acres, of water surface in the lake. This is close to 126 square miles of water. Of the 102,000 acres, approximately 10,000 have been added in the quarter of a century since the original purchases were completed and the lake flooded. This has been made necessary in almost all cases by landslides into the lake, and changes in shoreline. About 70% of this last 10,000 acres is in freeboard, enclosing the lake for anticipated further

slides, and about 30% is actually inundated (Tom Mutch, Personal Communication, 26 August 1966).

The lake is enclosed by Lincoln County on the south, Stevens County on the north to east, and Ferry County on the north and west. At its western end there are a few miles of Lake Roosevelt in Okanogan County on the north and Douglas County on the south. The entire north bank of Spokane River Arm, within Stevens County, is comprised of Spokane Indian Reservation land. The entire north bank of the main river, and all of the Sanpoil Bay Arm, within Ferry County and the small bit of Okanogan County, as far north as approximately river mile 90, consists of Colville Indian Reservation land. In both reservations the boundary of the government property is legally defined as the 1310 foot contour, except in some few areas where whole units of subdivided land were purchased; or, a few short stretches on the Colville Reservation where there is a survey line. On the southside of the lake the government property consists either of purchased subdivisions, land surveyed and purchased in such a way as to enclose slides or likely slide areas, or a survey line which roughly approximates the 1310 foot contour.

The area formally described in this report is that in Lincoln County. This amounts to the south shore of the lake, or the left bank of the Spokane River Arm to its confluence with the Columbia, and thereafter the left bank of the Columbia to Grand Coulee Dam. This is a distance of approximately 72 river miles from Little Falls Dam on the Spokane to Grand Coulee Dam. This is a distance of less than 45 miles in a straight line. Due to the convolutions of the shoreline, probably over 100 miles of shoreline were considered in this initial phase of the survey.

Ecology

Grassland gradually being replaced by forest dominates the valley of the Columbia and the mouth of the Spokane River. Grassland climax according to Rodgers (1942) includes Sandberg bluegrass, wheatgrass, bluegrass fescue, needle and thread, balsamroot, milk vetch, fleabone, lupine, bird-bills, and brown-eyed susans. Talus slopes support growths of Squaw current, purple sage, service berry, and choke cherry. The Talus foot, if enough moisture is present, may be covered with willows, hawthorne, herbs, and iris. Pond and marshy areas support various scouring rushes, grasses, and wild rye. Draws harboring annually flowing streams or creeks show more lush, denser vegetation and would be capable of supporting larger game than the dryer plateau lands where most habitable areas are situated. Growing along them can be seen such softwood deciduous trees as aspen, cottonwood, and willow, the wild rose, hawthorne, and berry plants.

All sites surveyed are situated within the two lowest life zones designated for Eastern Washington. The majority fall within the Upper Sonoran zone (ca. 0-1,600 feet) being characterized by open plateau and table lands. The plant cover predominantly includes such zone indicators as sagebrush, rabbit brush, sunflower, bitterbrush, and cactus. Fauna includes skunk, porcupine, deer, badger, blackbird, and meadowlark. The only other life zone encountered was the Transitional (sea level to 3,000 feet in the western part of the state, beginning somewhat higher in the eastern portion). The country is typically plateauland, plant cover includes Ponderosa pine, Oregon grape, and sage. No clear cut distinction between zones is evident, and the appearance of successions may be speeded up due to the exaggerated conditions produced from raising Lake Roosevelt.

Destroyed vegetation (below 1290 feet) has been historically recorded by: David Douglas (1914) in 1826 (specifically for the Upper Columbia to the Spokane River), Charles Pickering and W. D. Brackenridge of the 1841 Wilkes expedition (Pickering 1863), Charles A. Geyer (1845) in 1844, and Carl W. Sharsmith (1939) in 1939.

Human habitation does not appear to have altered the native cover, except in the area of Little Falls where some members of the Goosefoot and Amaranth Families have established themselves along highways and paths, undoubtedly as the result of modern rather than aboriginal occupation of the area.

Logging operations and contemporary farming have also altered the natural cover above the lake bank.

Method of Study

The method used in this survey consisted of familiarizing ourselves with the area, first by inspection of maps and aerial photographs and then by gross inspection of the area by whatever means was most convenient. This meant driving along or across the lake where possible, and cruising the lake in fairly fast boats in order to assess the value of various areas. Following this a detailed inspection was made by boat, starting at Little Falls and working down to the area of the log boom immediately behind Grand Coulee Dam. This was done in a 14 foot aluminum boat with a 10 h.p. motor, cruising in most cases only a dozen yards or less away from the shore at a slow speed, and going into all bays and harbors. Certain sections of particular interest or where this was most convenient were waded, and other sections were investigated by use of a rubber life raft. By this means all of the shoreline in Lincoln County has been given close inspection.

As a result of careful investigations, it is safe to say that there were no sites visible or exposed in the banks at the time of this inspection. An exception would be the Fort Spokane Beach site (45LI9), which is discussed in the text. Since most of the shoreline was inspected at least twice, and some of it more often than that, it may be assumed that this is a fairly safe conclusion as of the dates covered by this study.

Any areas which appeared to be at all likely for the presence of historic or prehistoric sites were inspected on foot. This was done either by walking from the boat, after beaching or by means of later visits to particular areas by car, where such access was possible. Also areas were investigated where there were reports from informants of sites or finds. Thus almost all areas which were not rock faces or steep talus slopes going directly into the water were given reasonable inspection. Areas further back were also inspected with field glasses both from the river and from vantage points along the access roads.

Informants were contacted, and are listed in the report. Those who proved to be most helpful, besides the Park Service employees, were members of other government agencies whose job it was to know the property or the soil of the territory. Test excavations were made in areas where it appeared they might confirm or deny the existence of a site. There were a number of places where this would not have been conclusive, and these sites are described only on the basis of surface evidence. Specimens were collected both from test excavations and from the surface. These collections are now housed at the Laboratory of Anthropology, Washington State University, Pullman, Washington.

Although the inspection of banks of the lake did not produce any eroding burials or more than one eroding site, it did show many interesting features. In effect, the shoreline cut by the lake at high water amounts to a continuous section or "trench wall" starting at about 1290 feet elevation and being anywhere from two feet to one hundred feet high. This is broken only by outcroppings of bedrock or talus slopes. Since most of the sedimentary stratigraphy here is related to glacial Lake Columbia and its various stands, and soil formation has occurred since those stands were left exposed by the draining of glacial Lake Columbia, this bank cut represents a most useful source of study. Several specimens were taken with this in mind, and are mentioned in the text. A full sedimentary study of the area should be made.

It was found most convenient to camp at the numerous camp sites provided in the Recreation Area, whether working by car or by boat. There was only one occasion when a campground was not immediately available where needed. We recommend that future work should operate from the same two sources of transportation. There are many areas of the lake shore, particularly at high water, which are accessible only by boat. At low water it is often difficult to travel by boat, so it will require some planning to reach these areas during low water. Certainly much time was saved in following the lake shore by boat, as it frequently takes many hours to drive away from the lake by one access road, a short distance along the main highway, and back to the lake along another access road.

The field work covered here was completed between the 1st and the 29th of August. In all, five days were spent doing research in files in various government offices, and nineteen days in the field inspecting the area. Some preparatory work had been done during July, and several additional days of research were spent in Spokane. Approximately ten days were required for completing the forms and writing a draft of the report after the field work was completed.

Effect of Water Levels

Lake Roosevelt is nearly 400 feet deep at Grand Coulee Dam. At the Canadian border there is only the original Columbia River depth remaining, of some 20 to 30 feet. Within the area of this study, the lake ends immediately below Little Falls Dam on the Spokane River. The Spokane River at that point is quite shallow, being not more than 10 feet deep except for a few potholes. The depth of this lake means that most of the areas of interest to both prehistoric occupants of the area and to historic settlement, are hundreds of feet under water. The Columbia River was both a major source of food and the major means of transportation in the area, so that all sites related to it were as close to it as convenient.

It is possible that some sites used for hunting or other seasonal purposes which were well above the level of the original river may be included by chance in or near the government property at the lower end of the lake. This would seem to be the case with the pictographs at Eden Harbor. At the other end of this survey, near the upper end of the Spokane River Arm, there are sites such as the Spring Creek Site (45LI4) which are still exposed because the lake has only raised slightly the level of the original river, and has not flooded the surrounding bottomland. It is also possible that some sites which are not flooded may be related to different water levels in the past. These might include higher stands of the river as stages of the receding glacial Lake

Columbia, or sufficient water to make springs where there are none now, or to make perennial streams which are now only occasional.

By and large, however, most of the sites found in this survey are sites which were not directly related to the original river, or which are at the upper end where the lake has made little change. The great majority of sites, aboriginal and white, which must be scattered along the shores of the old Columbia River, were covered in 1940 and 1941 when the lake was raised. The survey and salvage excavations made at that time (Collier, Hudson, and Ford 1942) did not pretend to have covered all sites. The work at that time was hampered by changes in personnel, conflicting policies and lack of government support, and pressed by the rising waters of the dam. The excavators salvaged what they could. They reported that "most sites were found on the lower benches" (Collier, Hudson, and Ford 1942: 9). Therefore we recommend that at any time when water is low enough to expose areas which we could not survey at high water, and which were not adequately recorded in 1940 and 1941, supplementary surveys should be made. (A map has been submitted to the Anthropology Department, Washington State University in connection with this report which shows the sites found in this survey, the sites found by Collier, Hudson, and Ford (1942), and sites reported by various informants. These together make a fairly coherent picture of what the distribution of sites may once have been, but even this does not adequately cover the lower part of the lake).

When the lake was established, it was anticipated that it might be necessary to draw it down from time to time, especially during the winter and early spring, when water was scarce. At that time it was planned that a draft of 80 feet, to an elevation of approximately 1210 feet above sea level, would be sufficient. In fact it has never been necessary to draw it down more than about 70 feet in the intervening 25 years. (See table of annual lake draft).

Even a draft of 60 to 70 feet has been sufficient to expose a number of sites in the past, particularly in the upper Spokane. Hence there is considerable urgency in the situation presented for the winter and spring of 1966-67. The Bureau of Reclamation has announced (Spokesman-Review 1966: 6, Spokane Daily Chronicle 1966: 6) that unless there is a wet winter, it may be necessary to draw Lake Roosevelt down approximately 140 feet below normal level. This would be an elevation of approximately 1148 feet. This extremely low draft would present a number of archaeological problems. It would expose the entire original river valley, as it existed before Coulee Dam was constructed, from about Sandy Spit, 6 or 7 miles up the Spokane River, to Little Falls. This would be most of the Spokane River exposed as it was in 1940. It would also expose everything above Kettle Falls, so that the entire northern third of the Columbia River, and all of the Kettle River Arm, would be completely exposed. In addition, there will be numerous benches and flats exposed downriver. Much of the Sanpoil Arm will return to its pre-dam appearance, and all of Hawk Creek will be exposed, except for the last mile of the Creek on the flat leading to the Columbia River.

The amateur collectors of the area were very active at the last low water, and can be expected to have noticed the announcements regarding the prospective draft of the lake. There is every reason to think that they will be more active this coming winter and spring than ever before, so that an emergency exists in certain areas. In this report we have tried to indicate those areas, at least within the region covered by this survey. Outside of that region, such emergencies will doubtless exist in and around Kettle Falls itself, and possibly in

some places nearby. It is our feeling, however, that while sites may be exposed there, the amateur collectors are not as active as they are on the lower river which we surveyed.

The normal pattern for draw-down and refilling of the lake has been that draft started in December, and maximum low was reached sometime in March or April. Usually there was no refilling until the spring run-off had reached its peak, about the end of May, and then the level of the lake was raised very rapidly so that by the middle or 20th of June the lake was at full level. Earlier run-off was apparently pumped directly into the equalizing reservoir for irrigation of the Columbia Basin Project (Ray Seely, Personal Communication, 26 August 1966). This coming year, however, it is anticipated that the lake level will be down to 1274 feet (ca. 14 foot drop) by 15 December, and at 1268 feet (ca. 20 foot drop) by 31 December, 1966. The maximum drawdown will be in March or April, and refilling from this very low level will start in late April or early May, earlier than usual. This is because otherwise the level of the lake will be too low to permit pumping of water into the equalizing reservoir of Banks Lake. It appears, however, that most of the sites with which we are concerned, and which have been exposed in recent years, will be exposed into May, and possibly to the beginning of June.

We recommend that an intensive field survey, with as large a party as can be managed, and salvage digging where necessary, should be made during the spring. Possibly this can only be done during a one week spring vacation, but if it can be arranged for longer, say the three months of March through May, this would be desirable. Apparently the winters in the lower Columbia Valley are relatively mild, so that work should be possible. Access roads may be difficult to travel, due to snow and later mud. Access by boat will be difficult for the upper stretches of the Spokane. In fact, rapids and shallows may make it impossible to travel to the most urgent area (Mill Canyon Basin, 45LI6) by boat. This can be reached relatively easily by car. We believe that the amateur collectors travel there throughout most of the year.

We also recommend, if practical, that aerial photographs be taken at least of the threatened areas, and if possible, of the entire river, during this maximum draft. This is a unique opportunity to record an area, much of which is otherwise unrecorded. The information in these photographs should be of value for studies also of river currents, sediments, etc. Thus, it might be possible to arrange for photographs to be paid for by a number of agencies. This should be investigated as soon as possible, since very detailed low-level photographs taken at this time ought to reveal many features geological and archaeological.

Comments on Table of Lake Roosevelt Drafts

The projected draft of 140 feet during the winter-spring of 1966-67 is unique in the twenty-five year history of Lake Roosevelt, and will expose almost all of the original Spokane River, and all of the Columbia River bed above Kettle Falls, including the Kettle River. In addition, major portions of Hawk Creek and the Sanpoil River Arm beds will be exposed, as will extensive flats lying above about 1150 feet elevation. However, drafts of about 60 feet have occurred in the last two years, and may be expected again. This exposes the Spokane River bed from Sand Flat upstream. Over the last decade drafts have almost never been less than 30 feet to 40 feet. This exposes all of the critical Mill Canyon Basin. It can safely be predicted that

this will occur regularly in the future. Thus, future plans should be based on the following assumptions:

(1) Every year there will be a period of nearly six months (mid-December to late May) when the lake will be drawn down from its "normal" level of about 1290 feet.

(2) The minimum level is usually reached late in March. Levels normally stay near this lowest point until late May, and the lake then refills rapidly during June.

(3) Every year draft will amount to at least 30 feet to 40 feet (elevation 1260 feet to 1250 feet).

(4) There is a strong probability that it will be drawn down at least 60 feet (elevation 1230 feet) for the next several years.

(5) Unless there is more precipitation than expected this coming winter, the lake will be drawn down as much as 140 feet (elevation ca. 1150 feet) by next spring. This unprecedented situation may never occur again, and should be taken advantage of, as it will go at least twice as low as any previous draft.

TABLE OF WATER LEVEL DRAFTS FOR LAKE ROOSEVELT, 1957 - 1966

Year	Date	Lake Level	Draft or Drawdown
1957	25 Feb.	1240.10'	49.90'
1958	24 Mar.	1245.7'	44.83'
1959	12 May	1250.90'	39.10'
1960	21 Mar.	1251.97'	38.03'
1961	13 Mar.	1252.50'	37.50'
1962	25 Mar.	1252.15'	37.85'
1963	22 Mar.	1255.09'	34.91'
1964	1 Apr.	1251.32'	38.68'
1965	1 Apr.	1224.10'	65.90'
1966	1 Apr.	1224.56'	66.00'

Maps Submitted

Maps marked in the following manner have been submitted with the site forms and the text of this report. All include the southern part of Franklin D. Roosevelt Lake, which is the area of this survey. (Full technical descriptions are given in the Map list.)

3 Coast & Geodetic Survey Navigation Charts (southern part of F. D. R. Lake) Scale 1:50,000

a Route Map, marked to show the exact routes taken by various means of transportation and the areas inspected, etc. Sites are indicated, but not numbered. This will serve to guide any future work in the same areas, and to indicate where supplementary surveys would be most profitable.

a Site Map, marked to show the sites found in Lincoln County, and sites reported which are across the river or under the water. It also shows the sites found by Collier, Hudson, and Ford (1942) in 1940-41.

a Probability Map, on which areas likely to have sites, if examined at Low Water, are named. Also stretches of shore-line which could not possibly have sites above lake level are marked for as much of the southern part of the lake as possible. These areas can be safely written off any future work, unless informants report sites on those exact locations.

5 U. S. Geologic Survey Quads (Grand Coulee Dam east to Wellpinit) Scale 1:62,500

These are marked so that the area of Government Property is shaded in green. This was copied from the latest N. P. S. property maps at the Recreation Area Headquarters, at Coulee Dam, and is accurate to the spring of 1966. These maps were used in the field for locating sites, but were not otherwise marked. The penciled map reference numbers on the site form folders are to these sheets, which we numbered 1 through 5 in red ink in the upper left corner, starting at Grand Coulee Dam and going upstream.

6 Bureau of Reclamation Enlargements of Portions of USGS Quads. Scale ca. 1:24,000

These are the base maps, and can easily be added to as work progresses. They are marked in red ink to show the location and designation of each site. As they were to serve for official recording, and are large, and of irregular size and shape, they were not taken into the field.

The reference numbers in green ink on the site form folders corresponds to these sheets, which are numbered in green ink on the upper left corner, starting at Grand Coulee Dam and running upstream. A sketch diagram serving as a key to the arrangement of these has also been supplied, as they are hard to orient. These maps have the property line plotted on them by the Bureau of Reclamation. It is extremely accurate, but in some places is one or two years out of date. In every case, this means that the government has acquired more property than the line shows.

5 Bureau of Reclamation photoreductions of Corps of Engineer "River Maps" of the Columbia River before Grand Coulee Dam, based on 1930 USGS Advance Topographic Sheets. Scale, ca. 1:40,000

These are not marked. They cover the Columbia River from below the Dam to the Canadian Border, but not the tributaries. These maps are invaluable as the only complete record of topography, river level,

structures, etc., along the entire Columbia River Valley now flooded. Some of the contours are hard to follow, some of the old topography is not completely accurate, and the cover sheet is missing, so that the stage of the river meant by water surface elevations cannot be determined.

The set was carefully stencilled on by the Bureau of Reclamation after inspection of the lake shores for slide prospects. This apparently served as a base map for the report on landslides (Jones, Embody, and Petersen 1961).

3 Metzker's Maps (Lincoln, Ferry and Stevens Counties) Scale ca. 1:125,000

These are marked in red ink to show sites and designations, and names of areas along the river. The map for Lincoln County is the basis for the sketch map which accompanies the text of this report.

The following additional maps were submitted, all for the Northern part of the lake. They are for use as the survey progresses.

1 Coast & Geodetic Survey Navigation Chart

7 USGS Quads (numbered in sequence after the first 5)

The Government property is marked in green pencil on both sides of the river, as far North as the North boundary of the Colville Reservation.

12 Bureau of Reclamation Enlargements (numbered in sequence after the first 6). These are unmarked, except for the Kettle Falls Burial.

II. SITE DESCRIPTIONS

Site Folder Discussion

For convenience of reference while work was in progress and for questioning of informants we have assigned a name to each site. On the site survey forms this is listed under item 9, "Previous Designation." This was needed partly because of the paucity of place names, especially along the Spokane River Arm of the lake. Most known landmarks were covered by the lake, and present habitation is so thin that many features of the raised shoreline have not received names since 1941. Thus we were forced to use well known local property designations in a few cases, but have employed geographic features whenever possible. Names and spellings are standardized from the USGS Quads rather than from the C&GS Navigation Charts. The latter seem inconsistent for terminology off the water.

We have tried to give information in a standardized order, as follows:

Elevation is given in feet above Mean Sea Level, as estimated visually from height above maximum lake level of 1288.5 feet for sites on banks above the water, or on maps from USGS contour lines on the Bureau of Reclamation enlargements of portions of the standard Quads. Where available, actual USGS Bench Marks were used for these estimations, but no instrument sightings or readings were taken.

Access to Water is given as the name of the nearest stream or river, at the point nearest to the site, then the elevation of the water surface at that point, the distance below the site of that nearest point, in feet, and the horizontal distance away from the site, scaled from maps with the direction indicated. The source of water indicated is for the 1930's, before Grand Coulee Dam flooded the area and created Lake Roosevelt. It is assumed that this is not appreciably different from the situation in immediately prehistoric times, say about A.D. 1800, for the Columbia River.

The location and elevation of the Columbia River as it existed in the 1930's is taken from a set of maps or charts prepared by the Corps of Engineers, while planning the lake behind Grand Coulee Dam. The base for this was a USGS survey. No title sheet is available, so it cannot be said what annual stage of the river is represented by the elevations shown for the surface of the river. It may represent an average. Since the above set of charts does not extend any distance up the tributary valleys, we have used the bottom depths shown on the C&GS Navigation Charts. In most areas it is possible to determine where the channel ran, and to read the soundings near the channel as indications of original river shore elevations. Also we have used pre-1940 aerial photographs, and descriptions of how much land was recently exposed at low water stages of the lake.

We have used annual streams where shown on the USGS Quads, but have not considered seasonal streams. We did not relate the sites to streams or springs which were not apparent on the ground or from the above sources.

Geographical Features were considered (falls, rapids, shallows, fords, eddys, and confluent streams) where we knew of them. Also the general location in relation to weather and the surrounding topography. For pre-1940 features the same sources used in "Water Accessibility" were consulted.

Availability of Potential Site Locations assessment led to our excluding large portions of lake bank, as a result of a shoreline inspection. Flat areas were considered as potential locations, if not more than about a hundred feet above the original river. Other, higher benches were investigated, but nothing was found.

Biotic Environment is similar for all the sites in the area. We saw evidence of a number of game animals near several sites. However, our biotic description is almost entirely floral.

To recapitulate the items we tried to standardize under "Setting"; they are:

Elevation
Access to Water
Geographical Features
Availability of Potential Site Locations
Biotic Environment

In practice they may appear on the site forms somewhat in the manner of the following description, Item No. 11, for the "Spring Creek Site." (45LI4)

"1300'-1320' Elev., Spo. Riv. 1280', 20'-40' Down, 100' N. Spring Ck. Mouth $\frac{1}{4}$ Mi. SE. Sheltered by hills all sides. Occs. part of only flat bottom in 3 mi. from Little Falls to Spo. Riv. Gorge Site. Open pine and grass. Meadow on bench behind, @ 1350'."

Description of Numbered Sites

45LI3

Little Falls site, fishing and habitation area. Located Sec. 20, T. 27N., R. 39E.; Wellpinit Quad. South of higher bridge and houses of Dam crew, on marshy bottom in elbow of Spokane River. Difficult of access due to flowing springs on hillside.

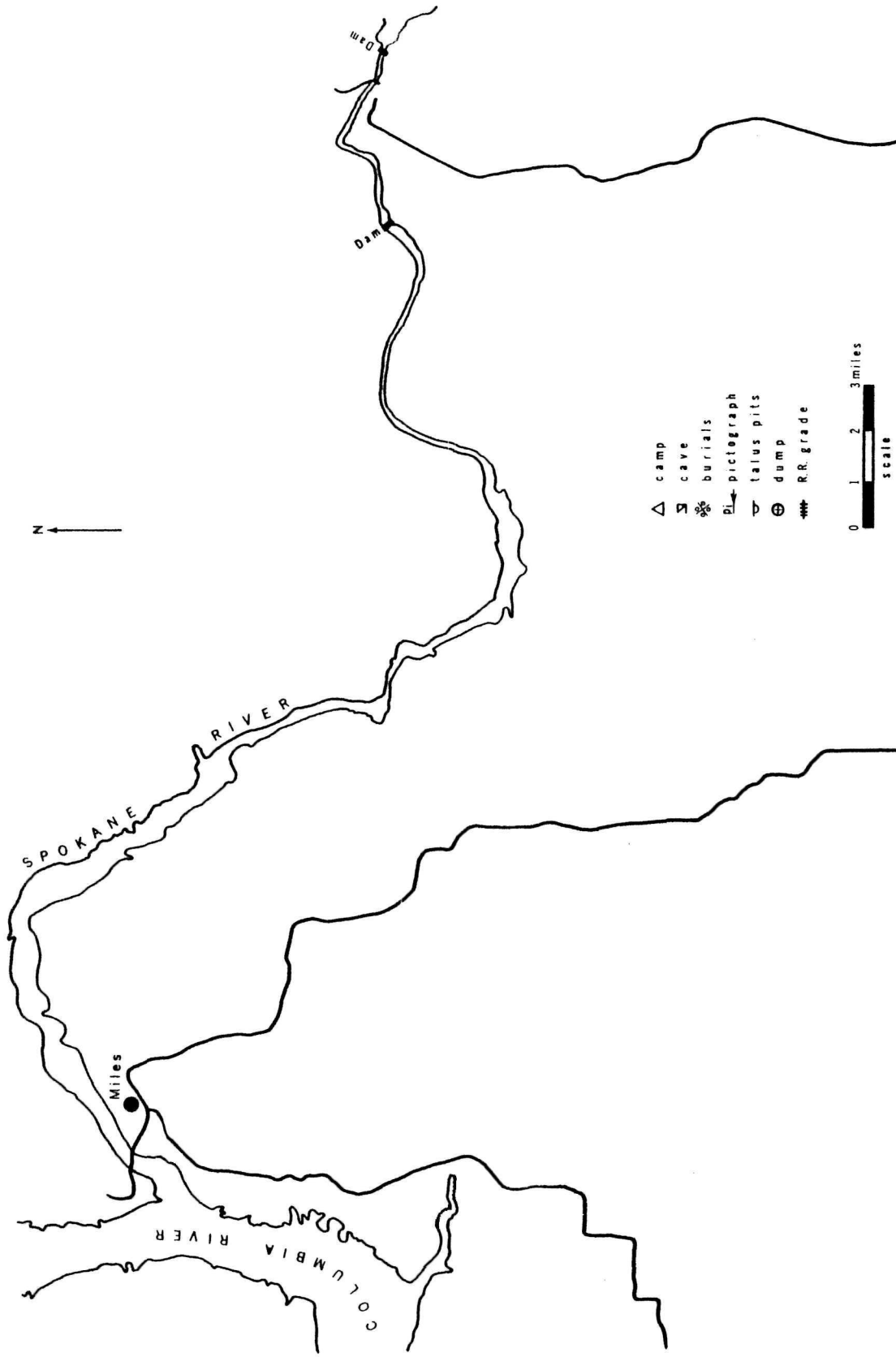
Site area consists of rock outcroppings, gravel bar and marsh.

Elevation 1290'-1300', Spokane River 1290', 0'-10' down, contiguous. Main channel and falls are to northwest a few hundred feet. Site is sheltered on all sides, covered with lush swamp growth and driftwood.

Site is currently overgrown with marsh plants. Springs may be result of seepage from dam which now covers part of the falls and perhaps some fishing stations. Recommendations: Investigate further in late fall or winter, when no snow, but leaves and grass are down, and springs dry or frozen. Site has probably been protected from potting by overgrowth.

46LI4

Spring Creek Mouth, habitation and burial site. Located Sec. 19, T. 27N., R. 39E.; Wellpinit Quad. Located on the left bank of the Spokane River near the upper end of the Recreation Area, about 1 mile below Little Falls. Take the dirt road going west from Little Falls-Reardan road at top of hill; cross Spring Creek about $\frac{1}{4}$ mile from mouth and follow track north.



Map. 1. Archaeological sites surveyed on the Spokane River and Hawk Creek areas of Lake Roosevelt, Lincoln County, Washington.

Note: Archeological sites removed from electronic edition of this map in an effort to protect sensitive cultural resources.

Site consists of about 17 depressions, assumed to be the result of habitation, about 8 rock cairns, and some midden which is very rich in mussel shell and crude stone choppers. The salvage work of 1940 did not reveal any house pits in the area of this survey, although ". . . a large number of saucer-like depressions were tested along the Columbia River and the lower Spokane." (Collier, Hudson, and Ford 1942: 37) that may make this site more important, since the exact location of the 1940 tests is not recorded.

Site elevation is 1300' to 1320', Spokane River about 1280', 20' to 40' down from the site, 100' to the north. Spring Creek mouth $\frac{1}{4}$ mile SE. Site occurs in only flat habitable area within 3 miles of Little Falls; is sheltered by hills on all sides. Area of occupation is approx. 100' by 700'.

The depressions, cairns, and midden piles are very visible from the surface, and some shallow potting has occurred. Recommendations: Excavate at least in part in summer 1967. Large, critically situated and probably only recently discovered by pot hunters.

45LI5

LeBrett Talus Pits. Located Sec. 27, T. 27N., R. 38E. Turtle Lake Quad. about $2\frac{1}{2}$ miles up the Spokane from the mouth of Mill (or Squaw) Canyon; or $5\frac{1}{2}$ miles below Little Falls, river mile 68, about 100' above the bottom of the talus.

Site consists of three depressions ca. 5' to 10' across on north facing talus.

Elevation is ca. 1450'-1500'; Spokane River 1260', ca. 200' down, 1/8 mile NW. It is the first open valley below the Spokane River gorge.

No cultural remains were found, but the depressions do not appear to be natural, nor recently disturbed. Recommendations: Area merits investigation due to its proximity to Mill Canyon.

45LI6

Mill Canyon Mouth, habitation and burial. Located Sec. 31, 32, T. 27N., R. 38E., Turtle Lake Quad. Within river miles 63-66, at southernmost bend in the Spokane River, where Mill Canyon enters. Accessible either by water or by Mondovi Road, (turn north on U. S. 2 west of Reardan).

Observed only on aerial photo taken in 1939 and from informants' descriptions.

Elevation 1240' to 1290'. Spokane River 1240', 0'-50' down and contiguous to site. Whole area sheltered, served as a major access route between rapids and fords in the river. Area of occupation ca. 500 acres (?).

At present the site is under water. Some parts reported to show hearths at low water. It has been extensively potted in recent years. Recommendations: Urgent. Should be mapped and tested between January and May, 1967. It is looted every low water; may be richest site on the Spokane River.

45LI7

Wally Sower's Draw. Located Sec. 23, T. 27N., R. 37E., Turtle Lake Quad. In draw of the first stream east of Pitney Creek, or the second stream west of Heartline Canyon, ca. 300' off the Spokane River.

Site is reported to be a concentration of chips around a spring.

Elevation 1325', Spokane River 1239', 95' down, 500' north.

Unapproachable by road which the owner has padlocked. Recommendations: Area seems likely for a site. Should be examined and tested; owner contacted.

45LI8

Detillion Settlement, historic site. Located Sec. 12, T. 28N., R. 36E., Turtle Lake Quad. On east side of point at northernmost bend in the Spokane River ca. 7 - 7½ miles upstream from the original mouth.

Site consists of 6 to 8 wooden foundation platforms, wrecked cars, and a cement reservoir.

Elevation ca. 1350', Spokane River ca. 1150', 200 down, ¼ mile N. E. on sloping hillside facing east.

Recommendations: Of historic interest only. Site not threatened.

45LI9

Fort Spokane Beach. Located Sec. 19, T. 28N., R. 36E., Lincoln Quad. Covers the area immediately north and adjacent to the Fort Spokane swim beach, just south of the bridge.

Area is a sandy flat, now open but once covered with pine.

Elevation 1295'; Spokane River ca. 1060', 240' down, 1/8 mile west.

One hearth eroding out the river bank and a few chips of quartzite about 4" below the surface in a bulldozer cut are the only indications of use found.

Most of the site is probably already gone. Area of occupation undeterminable. Recommendations: Area presently under some construction; should be checked frequently to see if worth salvaging.

45LI10

Fort Spokane Sewer and Dump. Located Sec. 29, 30, T. 28N., R. 36E., Lincoln Quad. About ½ mile south of Fort Spokane bridge, southwest of parade ground. Accessible by water or by driving southwest on service road behind fort, at foot of 1700' bluff.

Consists of late 19th and early 20th Century material dumped at the end of the service road and spilled down into a small cove. A broken tile sewer line runs into same area from the fort.

Elevation is 1290-1400'; Spokane River is ca. 1060'; 230' down from the dump, $\frac{1}{4}$ mile west.

Recommendations: Site of historic interest only; not in danger of destruction at present.

45LI11

Hawk Creek Talus Pits. Located Sec. 19, T. 27N., R. 36E., Lincoln Quad. Just north and east of highway ca. 3/4 mile above where the road crosses Hawk Creek, 200' up the slope.

Pits are visible from the highway as artificial appearing depressions in the talus slope.

Elevation is about 1500'; Hawk Creek above the falls by the bridge about 1350', 150' down, $\frac{1}{4}$ mile south.

At present are geologically sound and not in danger of destruction. Recommendations: As they are the only talus pits found in the vicinity, they merit further examination. Because of their proximity to the highway they may be in danger of being potted.

45LI12

Bluestem-Peach Railroad grade. Located Sec. 24, 25, T. 27N., R. 35E., Lincoln Quad. Emerges from water along the inner north side of Hawk Creek outer harbor, crosses to east side at gorge and runs east past the falls.

The grade was built by the Great Northern some time before 1930. The track was never laid, nor the bridges built. Starts at Bluestem, passes west of Davenport and down Hawk Creek.

Elevation of grade: 1290-1370'; Hawk Creek 1030 to 1340'. A 1931 bench mark is present on a concrete wall just above the falls.

Recommendations: Requires historical research, may have had some construction camps of interest associated with it.

Caves Above Hawk Creek

There are five caves on the lava bluff to the north side of Hawk Creek. Since some of the information about them is common to all, we will discuss the general factors first. At about 1700 feet elevation there is a series of at least three flows which appears particularly well adapted to the creation of caves. The upper flow is of vesicular basalt approximately twenty feet thick, as exposed. In this area there is only a gentle slope with grass above this top flow. There appear to be other subsequent flows set further back, but north of Hawk Creek a "roof flow" normally is the uppermost level of lava on a set of projecting promentories, and has a grass slope back to the next rock behind it. Under the vesicular flow is a flow approximately forty feet thick. This has solidified into a semi-columnar basalt, and is pitted with many holes. Underneath that is another apparently harder vesicular flow.

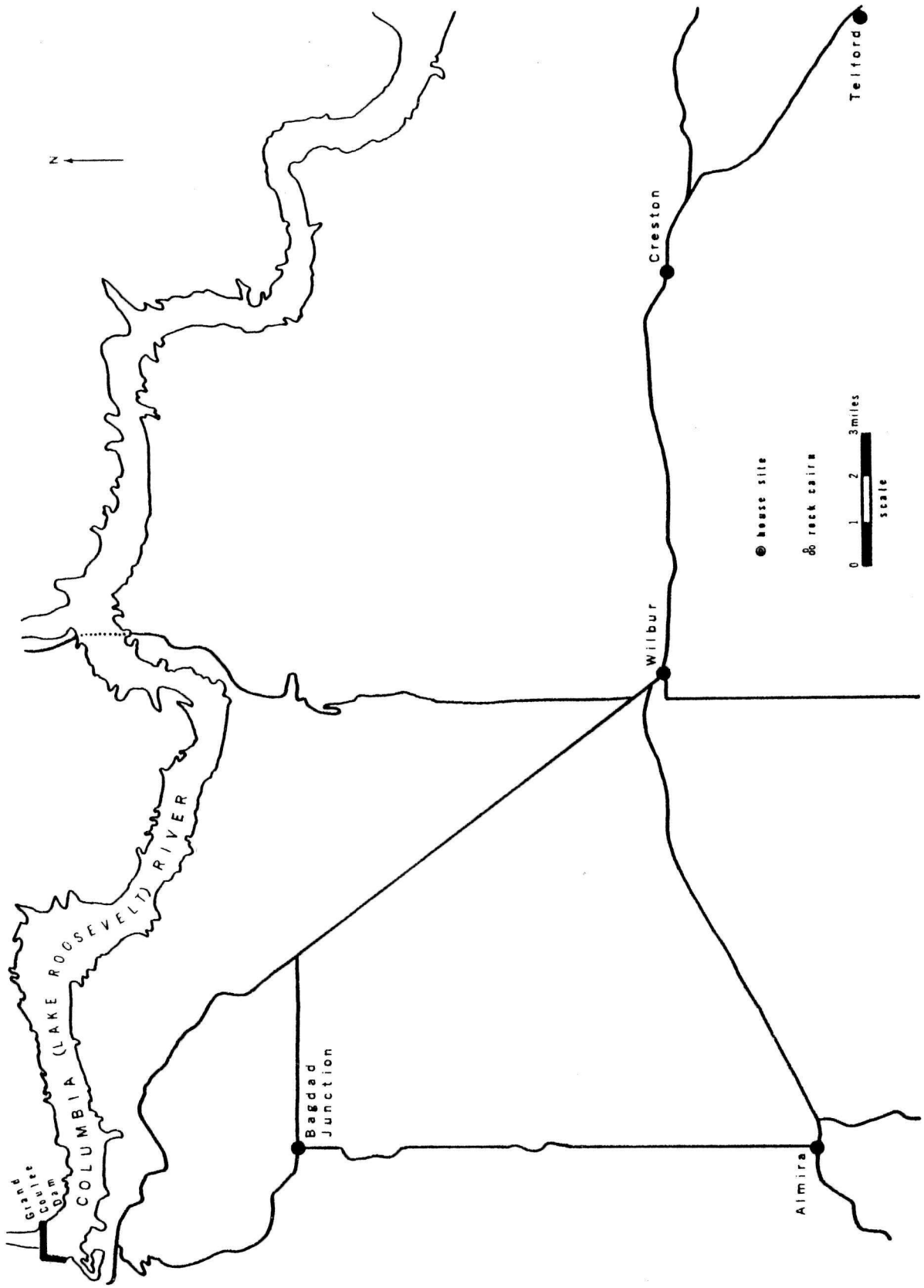
Where these three layers are exposed they tend to form irregular promontories. The lower flow is normally covered or obscured in most places by basalt talus sloping at approximately a 45 degree angle or less. In some places the holes which pit the surface of the semi-columnar basalt in the middle of this sandwich have developed through erosion, or possibly were larger to begin with. These have made the five caves which seem suitable for habitation.

The elevation of these caves has been judged from the contours on the USGS Quads. Since the contour lines are at 40 ft. intervals, they do not always show small cliffs or bluffs, and in any event cannot give very much precision. Therefore we cannot be certain as to this elevation, but it is surely within 100 feet, and probably within 40 feet of the correct elevation. More specific location could be made using aerial photographs, but probably the only safe thing is to actually measure the elevations of the caves. It appears that all the caves are in this same formation, and that the formation is essentially level, so that they all have the same elevation. At the bottom of the talus slope in front of them there is sometimes a terrace. This is most noticeable in front of caves 1 and 2, where there are very marked terraces at about 1600 ft. Along much of this stretch of the river the most noticeable benches or terraces are at 1400 feet, and another, higher and presumably earlier one, at about 1700 feet. It is possible that in this area at Hawk Creek the caves may be at such an elevation as to have been cut by water action at the same time that the higher or 1700 foot bench was being laid down. In any event, there were certainly several stands of water creating benches below the level of the caves. Since it is assumed that these benches were made by "Glacial Lake Columbia" this means that the caves, if they had been formed yet, presumably stood above the water level of some of the lower or later stands of that lake. They may have been very close to the surface of some of the stands.

This relationship to lake levels takes on added significance considering the fact that these caves are much removed from water as it existed in immediately prehistoric times. Hawk Creek has a very rapid fall, dropping almost 300 feet in about three miles or less, from the foot of the falls to its confluence with the Columbia River. Thus caves 1 and 2, which are furthest upstream, are only 430 feet above Hawk Creek at its nearest point while cave 5 is about 550 feet above it. However 430 feet is still a considerable height to carry water, and the creek was at least one-half mile away, over difficult terrain. It is possible that other differences in past water availability, such as a wetter climate and regular streams or springs down draws which are now dry, might have made the caves more habitable. Caves 3 and 4 are the ones most likely to have profited from these sorts of conditions, as they face onto a side canyon, rather than directly onto Hawk Creek.

All the caves seem to have areas of relatively active roof-fall near the back, and the debris in the cave is largely made up of roof-fall. Most of them have a fairly small level area near the back, and then slope down toward the front. This slope is usually continued in the talus slopes in front. There is no apron or level area in front of each cave which could be readily used.

All the caves may be reached from the water, but only after an arduous hike. For any prolonged campaign, access should be by road. There is a field road which runs not more than 200 feet behind and about 50 feet above the entrance to caves 1 through 4. An arm of this road may reach around the far side of the bluff at the entrance to Hawk Creek, as there are faint tracks



Map 2. Archaeological sites surveyed on lower Lake Roosevelt, Lincoln County, Washington.

Note: Archeological sites removed from electronic edition of this map in an effort to protect sensitive cultural resources.

running not far down the slope below cave 5. However they do not appear to have been used in some time, and that portion of the road may be blocked or unusable. The road which we followed seems to run out a short distance beyond caves 3 and 4. It is probably driveable to that point, since a rancher's water tank on the road appeared to be well serviced and the ruts were fairly new. Caves 1 through 4 are not on government property, but are in an area where very extensive slides along the north side of Hawk Creek have made it necessary to purchase whole quarter sections of land. Thus they might well be acquired in the future, although they themselves are not threatened by obvious slide action. In any event, they are certainly within the area prescribed for the survey. Cave 5 is on government property.

45LI13

Hawk Creek Cave 1. Located Sec. 19, T. 27N., R. 36E., Lincoln Quad. About $\frac{1}{2}$ mile north of the inner harbor. Hawk Creek. East of a pair of caves, above a flat bench at ca. 1550'-1600'. About 100' of talus slope extends from the mouth of the cave to the bench.

Cave 1 has a nearly circular mouth, diameter 30'; maximum depth of cave 50'; roof 8' to 12' high at the back. There is no positive evidence of human occupation, no midden deposit or fire blackening.

The back of the cave is actively falling. Recommendations: The cave is a likely habitation area and should be carefully tested. It will be difficult to dig due to accumulation of roof fall.

45LI14

Hawk Creek Cave 2. Located Sec. 24, T. 27N., R. 35E., Lincoln Quad. ca. $\frac{1}{2}$ mile north of the inner harbor of Hawk Creek; the west member of a pair. Above a flat bench ca. 1550-1600'. 100' talus slope in front.

Cave is 25' deep, about 20' diameter at the entrance and tapers back. At present occupied by rattlesnakes and other animals.

Elevation is 1700'; Hawk Creek ca. 1270', 439' down, $\frac{1}{2}$ mile south and east. Approximately 100' west of cave 1.

Recommendations: Test excavation should be made. No salvage urgent, but caves are vulnerable to potting.

45LI15

Hawk Creek Cave 3. Located Sec. 24, T. 27N., R. 35E., Lincoln Quad. ca. 1200', 500' down, 3/4 mile south and west ca. 100' northeast of cave 4. Faces southeast. Same as caves 1 and 2 except that it is further from Hawk Creek.

Similar to the other caves, no evidence of potting. Recommendations: same as for above two caves.

45LI16

Hawk Creek Cave 4. Located Sec. 24, T. 27N., R. 35E., Lincoln Quad. Specific location is the same as that listed for cave 3. The two form a pair of adjacent caves, may even be interconnected. Cave 1 is the southeast member of the pair. Recommendations: same as those for caves 1 through 3.

45LI17

Hawk Creek Cave 5. Located Sec. 23, T. 27N., R. 35E., Lincoln Quad. $\frac{1}{4}$ mile northeast of small draw at the entrance to Hawk Creek.

Cave is about 35' wide at the mouth, 15' high and 45-50' deep. There is no midden accumulation visible, however a mussel shell fragment was found in the talus at the mouth of the cave.

Elevation is about 1700'; Hawk Creek about 1150'. 550' below, $\frac{1}{4}$ mile to the southwest. The cave faces to the southwest and is in the same formation as the other caves.

The present condition is stable. There is some evidence of disturbance of the surface which may be human. Charred bone fragments and a tooth were found during test excavation. Of all 5 caves it is the most likely to have been inhabited. Recommendations: Has a deep soil deposit and should be extensively tested.

45LI18

Moonshiner's Place. Located Sec. 33, T. 28N., R. 34E., Wilbur Quad. First canyon west of Jump Canyon.

Historic site. Remains of cabin still standing, apple and grape orchard.

Elevation 1400'-1500', Columbia River 1000', 400' down, 1/8 mile to the northeast. Creek runs through the site, surrounded by wooded area.

Recommendations: Of historic interest only. Cabin of very flimsy construction will probably be completely gone in next few years.

45LI19

Kaufman Canyon. Located Sec. 21, T. 28N., R. 32E., Grand Coulee Dam Quad. Site area is at river mile $11\frac{1}{2}$, at the mouth of Kaufman Canyon, west side. It is accessible either by road or from a road through Neal Canyon.

At present remains of historic house foundations and several root cellars and other features are visible, including a dump. An Indian cemetery is reported to be within a mile of the house foundation, and projectile points are reported to have been frequently found around the house. One was found by the survey in the road ruts in front of the house foundation.

Elevation is 1290'-1330'; the Columbia River 950', 360' down and $\frac{1}{2}$ mile to the north. A creek also runs past the site.

Recommendations: This is an extremely interesting canyon with a large open area, providing a good living site, and a creek in the draw. It is not in immediate need of salvage but should be further investigated. It is probably not known to collectors.

45LI20

Gladys Price Site, historic habitation and herding. Located Sec. 21, T. 28N., R. 32E., Grand Coulee Dam Quad. Foundation is on hill slope, about 300' north of the road (toward lake). It is accessible by boat, or by driving down Neal Canyon.

The house, of which the foundation is still intact, was lived in by a Negro woman who herded sheep in the first half of the 1900's. It was abandoned sometime in the '50's and the house taken away.

The elevation is 1400', the Columbia River 950', 450' down and $\frac{1}{4}$ mile to the north. Recommendations: no salvage required.

45LI21

Cayuse Bay Cairn. Located Sec. 18, T. 28N., R. 32E., Grand Coulee Dam Quad. Cairn is located on a hillslope at the head of Cayuse Bay. Is accessible by road, but visible only from the water.

Elevation is about 1350', the Columbia River 950', 400' down and $\frac{1}{2}$ mile to the northeast.

Recommendations: Cairn is probably built by sheepherders. Does not require salvage.

45LI22

Long Lake Dam, pictographs and possibly habitation site. Located Sec. 14, T. 27N., R. 39E., Wellpinit Quad. Near Long Lake Dam, about 3 miles east of Little Falls; on or near the road to the dam or by WWP picnic area. This site is out of sequence in relation to the other sites due to site numbering problems encountered at Washington State University.

Site has not been inspected, and is not on government property.

Its position is ca. 1370', the Spokane River is about 1350'; ca. 20' down and a few hundred feet north.

Recommendations: Area is likely and this reported site should be inspected.

Potential Areas

There are a number of areas now under water which we consider to have a high potential for sites. This is partly because evidence from other stretches of the river suggests that careful examination under the right circumstances will show that there was occupation at one time or another in almost all habitable parts of the old river. It is also partly because of peripheral finds on the upper

banks still above water, or burials which indicate that there was habitation nearby. Since most of these potential areas are flats where there was extensive bottomland, they are almost all areas where the lake is now fairly wide, as opposed to narrow stretches. Therefore most of these are at "basins" of the lake. We have given names to areas where no names exist. The description will be in the order upstream-to-downstream, from Little Falls to Coulee Dam--that is, from east to west, which is the order of all descriptions in this report.

Mill Canyon Basin. This area is from approximately river mile 63 to 67. Mill or Squaw Canyon and Harker or Hartline Canyon enter it from the south. On the north is a large flat, which we have called Cayuse Flat from the prominent Cayuse Mountain immediately to the north of it. This flat is mostly at about 1700 feet elevation, and there are large bluffs several hundred feet high from the lake to the flat above. These expose sand and gravel, and are subject to numerous slides. There are some extremely shallow places in this basin; even at high water snags and some two to four foot depths are noted. If the water is down even a few feet it becomes very difficult to navigate here, and when the water is down 40 or 50 feet, the old river bed is exposed throughout, and navigation is almost impossible. Pre-1940 aerial photographs confirmed verbal descriptions that there were fords or shallows where the river could be crossed here. It is reported that a major artery of aboriginal travel ran roughly from north to south through here. Presumably from the tableland to the south it came down Mill or Squaw Canyon, crossed the shallows at the mouth of Mill Canyon, and went up to the country to the north. The fact that this basin is the southernmost bend of the Spokane River lends credence to the tradition (R. Randall, Personnel Communication, 24 August 1966). We have listed as a site the area on the south shore of the old Spokane within this basin. Burials were seen and photographed here by Rick Gale, Park Ranger, Fort Spokane, NPS, in March, 1966, after they had been looted, and then reported to the County Sheriff's office. The approximate location of these is indicated with the site form. There are a number of vague allusions from informants indicating that habitation and burial sites cover the rest of this area (Site 45LI6). We have designated the area across the river as the "Cayuse Spit Habitation Area," from the prominent spit that extends south from Cayuse Flat, just below the surface of the lake at high water. This spit is known to have much habitation evidence on it. A separate site was indicated because of the county boundary, and also because the original river which existed is likely to have constituted a real division, although all occupation of the area is doubtless inter-related. A third site was recognized in this basin as the "Cayuse Spit Longhouse." This is an Indian longhouse, apparently of the 20th Century, which must be at the water line, since the foundations are sometimes visible. It is at the mouth of the draw which leads north up the Cayuse Flat. On Cayuse Flat itself, beyond the end of this draw, there are reported to be burials. However, our informant (Crandall) did not know their location. We have found some talus pits at the very eastern edge of this area. (LeBrett Talus Pits, 45LI5.) If these are burials, they are probably related to occupation of the flat immediately opposite them, where the LeBrett's large alfalfa fields are. That would probably constitute an eastern extension of this whole occupation. There is also reported to be a camp (or camps) a short distance up Mill or Squaw Canyon. Again our informant (Randall) was not certain of the location.

In all, the combination of rapids, a ford, fishing area, suitable living area, a major communication artery, and an opening of bottomland with narrow stretches of gorge for some distance on both sides of it, with feeder streams

coming in from the south, all combined to make this a very suitable and sheltered area for prehistoric living.

We are confident that this is one of the richest if not the most important area on the Spokane River Arm of the lake. It is well-known to the local collectors, and has been worked by them before. It is exposed any time that the lake is drawn down as much as 50 to 60 feet. Therefore we consider this to be the area where additional survey and probably considerable salvage excavation is most urgently needed.

At the west end of this basin, just downstream from Hartline or Harker Canyon, is a large slide known as Blue Slide. This may have occurred in the 1920's or early 30's. It is possible that it destroyed a number of cabins and killed several people. It certainly predated the flood of Lake Roosevelt, because it is already present on the 1938 and 1939 photographs.

Sand Flat Area. After leaving the Mill Canyon Basin the valley of the river narrows and becomes a gorge as it passes the long tableland called Sand Flat. Just upstream from Sand Flat are two bends in the river where there are shallow areas and where flat plateaus make it possible that there was habitation. These two bends, at approximately river miles 58 and 59, are considered likely potential areas for sites. The chips found at the spring in "Wally Sower's draw" (45LI7) are on the margin of the more downstream of these two bends. Since both of them will be completely exposed at most low-waters, they certainly should be checked. The difficulty of living anywhere in the gorge along Sand Flat itself, or in the fairly narrow canyon upstream from these two bends to the Mill Canyon Basin, makes it more likely that there might be habitation or use here.

Laughbon's Basin. This is the area immediately downstream from the northwest end of Sand Flat, where Lake Roosevelt opens out to a wide basin. Laughbon's Landing and Pitney Point are on the south here, and Blue Creek enters from the north. Terraces like the high ones of Sand Flat extend under the lake, and there are indications in aerial photographs that this was a suitable place for habitation. The occasional streams entering from the north and the south, and some indefinite reports of sites at or near Blue Creek on the Reservation (Willard Pfaffel, Personal Communication), increase the likelihood of habitation here. The area might be extended downstream (north) almost as far as Porcupine Bay campground.

Detillion Basin. The Detillion Basin is at the northernmost bend of the Spokane River, at approximately river mile 48 to 50. A seasonal stream called Ferguson Creek enters from the north. The area was important during historic times, as a bridge and a number of small settlements were there. There was historic Indian occupation of the area, which is still represented by the cemetery on the Reservation side. Collier, Hudson, and Ford (1942: 16, 35-6) found sites here. These sites were burial areas, all found while the water was rising, and under pressure from the "Reinterment Program." The presence of these burials, in some number, and of the historic Indian Cemetery still above the lake, and of the fairly concentrated white settlements in the area (Detillion Settlement, 45LI8) all suggest that this bend of the Spokane River probably was an area of considerable activity.

Sandy Spit Area. This is near river mile 44, where Sandy Spit extends from the south shore. There was a sharp bend in the original river here, and a seasonal creek enters from the north. There are pictographs on the

north side of the river here (see "Sandy Spit Pictograph Site") and this is close to the Detillion Basin. Perhaps it should properly be considered part of the same area, although there are indications that the course of the Spokane River was such as to make these two distinct areas. If the extreme drawdown anticipated occurs during this coming winter of 1966-67, everything from this area upstream should be exposed more or less as it was before Grand Coulee Dam was built.

Spokane River Mouth. There are undoubtedly extensive settlement and use, both prehistoric and historic, near the mouth of the Spokane River. This is a mile or more downstream from the present bridge which crosses the river and the area of the fort, at about river mile 40 on the Columbia. There are certainly numerous historic reports of use in this area. For instance, George Simpson camped here for five days in 1825 to confer with Indians and fur traders (Merk 1931: 133-7). The burial or burials reported to have come out of the lake shore near the mouth of the Spokane River; site 50 of Collier, Hudson, and Ford (1942: 35-6) and our north shore "Fort Spokane Burial," which is a persistent report of a burial or burials on the north side of the river opposite the fort; all give indication of habitation in the area, presumably on the lower river flats now flooded. The Spokane Beach Site (45LI9) is not at the old mouth of the river, and may represent an earlier occupation period. However, it confirms the general picture of use of the confluence of the two rivers.

Peach Area. This is the designation of the flat river bottom between the mouth of the Spokane River and the mouth of Hawk Creek running from about river mile 43 down to 39. The town of Peach seems to have moved once or twice in this area. At one time it was at the mouth of Hawk Creek. At another time it may have been some distance north. Pre-dam aerial photographs show lumber operations and log piles along this flat. The Bluestem-Peach spur of the Great Northern Railroad, for which the grade was built and is mentioned in Hawk Creek (45LI12) ran out onto this flat an indefinite distance. There is an historic map surveyed for the U. S. Army before 1900 of which a photocopy is at Fort Spokane. This shows a "Chinese flume" running out of Hawk Creek and diverting water north onto the flat for working a gravel bar. This bar is recorded as "gold-bearing" and is named "China Camp Bar." It is possible that some of these features may be visible at low water.

Hawk Creek-Inner Harbor. This is potentially a highly significant area. The five caves found above Hawk Creek are of interest, and any occupation of them may have been related to Hawk Creek. However the area of the Inner Harbor, near the falls, was of interest in itself. It is reported that salmon migrated up Hawk Creek as far as the pool below the falls, and spawned there. There was certainly salmon fishing at the mouth of Hawk Creek in historic times. The falls must be relatively old, so that the basin below them probably has existed since Lake Columbia was drained and the water drainage patterns of the area were consolidated.

However, the bed of the stream within the area at the foot of the falls has not remained constant. Within the short time that the National Park Service has maintained and administered this area the main channel has shifted radically from one side of the flat to the other. The area which is now a campground apparently consists of several feet of flood deposit from the last fifteen years. This is confirmed by our test excavations. We are fairly confident that within the confined area between the cliff on the south side and the steep hill slope on the north, and the foot of the falls and the beginning of the gorge of Hawk Creek, there is probably evidence of human occupation going back a considerable period of time.

This area should be exposed by the lake with a drop of 30 to 40 feet of water, which means it is probably exposed every winter and spring. The creek will still flow through it, but the majority of the area should be fairly dry. Intensive examination at this time should be able to further limit the area which might contain evidence of habitation. The chances are, because of this shifting stream bed and heavy deposits of silt, that a complex series of erosion and deposition features make up the fill in this small basin. Evidence of human occupation here may be concentrated near the pool at the foot of the falls, as this would always have been a pleasant and sheltered site, and would have provided fish at certain seasons of the year. This evidence is probably not visible on the surface, partly due to silting from Lake Roosevelt, but largely due to the shifting deposits of the stream. Therefore any examination of this interesting area would have to be made with extensive test digging or possibly machine trenching, after a very careful study of the possible areas and the geochronology of the deposits.

Hawk Creek Mouth. This is not as likely an area. There probably was some habitation here, and certainly some fishing. However, due to the very steep drop of Hawk Creek (about 300 feet in three miles) from the falls to its mouth at the river, the flat at the mouth is very low in elevation. It is extremely unlikely that this area will be exposed by draft of Lake Roosevelt. It is also unlikely that there are any concentration of sites from here downstream on the Columbia past the site of Lincoln and around the next bend.

Halvorsen Area. This includes the area from the point east of Halvorsen Canyon to the area of White Stone Bluff. There is a large flat on the north side of the river, and possibly there may have been some occupation there. Halvorsen Canyon and Jump Canyon enter the lake from the south in this stretch. There were two sites found here before the flood: one a surface site, and the other a small rock shelter (Collier, Hudson, and Ford 1942: 26-7). In this area we found the Moonshiner's place (45LI18). There are talus slopes and possibly formations with small caves or rock shelters relatively close to the lake here, and much closer to the original river than are talus slopes set further back on higher bluffs along other stretches. It is probable that there was always a certain amount of occupation here, but it would require a very substantial drawdown of the lake to expose the sites found in 1940. The drawdown anticipated for the winter of 1966-67 will expose a large bench on the north side here, and this could be checked.

Whitestone Basin. From the north side of the river here Collier, Hudson, and Ford (1942: 14-26) have recorded eight sites (5, 7A & B, 11, 12, 13, 24 and 25). This can probably be attributed to the major rapids immediately downstream at Hellgate. This is one of the best reported areas on Lake Roosevelt, but it appears that most of the occupation was on the river bottom, as we found nothing, saw no areas likely to be occupied, and heard no reports of local people finding anything there. It is possible that the pre-flood salvage work found all or most of the sites here, and exhausted the area. We feel it more likely that the intensity of occupation found in 1940 indicates that there are more sites. They may be concentrated, as were those found earlier, on the north bank of the river.

The Hellgate Area. This is river miles 22 to 23, immediately below the Whitestone Basin. It seems to be directly related to the rapids, whereas the Whitestone Basin upstream probably was related also to feeder streams from the north routes of transportation. Two sites (22 and 23) were found here in 1940 (Collier, Hudson, and Ford 1942: 23-4). We were unable to find any sites

here, but noted that there is a major break in the rimrock to the south, providing a general route of access from the south to this area. An alfalfa field occupies most of the gentle slope down to the lake here now, and a major draft of the lake would expose a flat extending out to the riverbed, which is fairly close to the north shore of the lake here. The pre-flood contours of this area show that there was a steep slope from the edge of this flat down to the original riverbed. This slope was at least 100 feet high, from river elevation 1,000 feet to 1,100 feet, and then the area sloped back from 1,100 feet to 1,300 feet. Most of this sloping area will be exposed, but a steep bluff makes it unlikely that there were major sites on this slope. They were probably on or near the bottomland, and will not be exposed by any anticipated draft of the lake.

Keller Ferry Area. The flat on the south side of the lake here seemed a likely place for occupation. However, we covered most of this and found nothing, nor any areas where sites seemed probable. Local informants knew of no sites in the area. There was an extensive flat at a low elevation (about 1,020 to 1,070 feet) before the flood, and this almost surely must have had occupation, since it faces the mouth of the Sanpoil. There were three sites (2, 3, and 4) found in this area before the flood (Collier, Hudson, and Ford 1942: 14), and there was some historic occupation of this flat. It is too low to be exposed by any anticipated drawdown, but the benches immediately above it will be exposed, and ought to be inspected. The so-called blade find at the present north terminus of the Keller Ferry is almost surely a chance find. We inspected the bank in question and it appears to be entirely fluvial gravel and sand, with a very shallow cap of soil. There is good indication that obsidian was available, at least in small quantities, from an area exposed by a roadcut. This is visible driving from Wilbur north to the Ferry, immediately after coming down off the tableland above, and passing the first hairpin bend (the view point) and the second hairpin bend (where there was a sandbox), as the person driving to the ferry is going north once again and guard rail begins. Exposed lava formations here show what appears to be an extensive volcanic ash fall, with evidence of trees buried by the ash and subsequent lava flows. Obsidian was reported from the hillside immediately below a prominent exposed tree.

Swawilla Basin. This area extends roughly from river mile 7 to 12, and includes the south side of the river from Plum Point to Kaufman Canyon. There were no sites reported here in the salvage before the dam, but this may have been because the water was already rising, and the urgency of working at important areas where sites were known. We have evidence of considerable historic occupation (45LI19). There was a bar here, and several streams and creeks that came down from the south should have made the area interesting. There was also an extensive flat about 100 feet above the old river from river mile 7 to 9 on the south side of the river. On the north side is the very large terrace at 1400 to 1500 feet called Swawilla Flat. Queque Creek enters from the north, and this is an area of some interest. There was historic Indian occupation of the area, and it bears the name of a prominent local Indian of the 20th Century. We noted several natural features of interest in the wave-cut banks near the present Plum Point campground.

Grand Coulee Dam Area. This area extends from river mile 0 to 7 upstream of the dam. In this area there was nothing reported before the flooding. However, we have received reports of a site on the old river bottom at "Trinity Bay" across from the Spring Canyon campground, and of a site also on the north shore directly opposite the mouth of the Grand Coulee. There is a reference (See the manuscript on "Historic Indian Occupation of the Area Near

TABLE SHOWING AREAS OF RIVER BOTTOM WHICH POTENTIALLY HAVE OCCUPATION AND SHOULD BE INVESTIGATED IF EXPOSED BY LOW WATER

River Miles	Name of Area	SITES ASSOCIATED In Lincoln Co.	On North Side Rivers	Collier, Hudson & Ford
		EXTREMELY URGENT		
63-67	Mill Canyon Basin	LeBrett Talus Pits 45LI5 Mill Canyon Mouth 45LI6	Cayuse Spit Habitation Cayuse Spit Long House Cayuse Flat Burial	-----
		IMPORTANT		
39 (+2)	Hawk Creek Inner Harbor	Hawk Creek Talus Pits 45LI11 Hawk Creek Caves 1 & 2 45LI13 & 14 Bluestem-Peach RR Grade 45LI12	--------	-----
		VERY LIKELY TO HAVE BEEN OCCUPIED		
58-59	Sand Flat Area	Wally Sowers Draw 45LI7	--------	-----
54-55	Laughbon's Basin	-----	(Reports of sites at Blue Creek)	-----
48-50	Detillion Basin	Detillion Settlement 45LI8	--------	8, 48, 51
24-26	Whitestone Basin	-----	--------	5, 7a & b, 11 12, 13, 24, 25
22-23	Hellgate Area	-----	--------	22, 23
		LIKELY TO HAVE BEEN OCCUPIED		
44	Sandy Spit Area	-----	Sandy Spit Pictographs	-----
43-45	Spokane River Mouth	Fort Spokane Beach 45LI9 Fort Spokane Sewer & Dump 45LI10	Fort Spokane Bridge Burial	50
39	Hawk Creek Mouth	Hawk Creek Caves 3-5 45LI15-17	--------	-----
15-20	Keller Ferry Area	-----	Keller Ferry Blade Find	2, 3, 4
7-12	Swawilla Basin	Kaufman Canyon 45LI19 Gladys Price 45LI20 Cayuse Bay Cairn 45LI21	(Reports on Swawilla Flat)	-----
		POSSIBLE OCCUPATION AREA		
39-43	Peach	-----	--------	-----
29-32	Halvorsen	Moonshiners Place 45LI18	--------	29, 30
0-7	Grand Coulee Dam Area	Eden Harbor Pictos 45GR122	Trinity Bay Elmer City, Kuntzville	-----

and Below the Dam," reproduced here as an appendix) that the "Rattlesnake Canyon" area may have served as a winter camp. The pictographs which we have reported at Eden Harbor are at one end of Rattlesnake Canyon, and may be related to this. It is very likely that there were other sites in the area immediately behind or under the dam but these are irrevocably lost.

There is substantial evidence of very intensive occupation of the area immediately below the dam. The manuscript of Historic Indian Sites mentions several in this area, and our informants in this area have found a number of sites (Mrs. W. O. Beck and Mrs. Erma Pryor, Personal Communication). Some professional survey has been done in this area (Osborne, Crabtree, and Bryan 1952), but it is not known if they surveyed up to the tail race of Grand Coulee Dam. Since this is the area immediately adjoining the arbitrary area of this survey, there is likely to be cultural relationship and it should be considered as a peripheral interest.

Summary of Salvage Priority

Numbered sites, on Lincoln County Side of River

Top Priority

(Should be investigated fall of 1966 to fall 1967)

45LI9 (Fort Spokane Beach) Area presently disturbed by construction. Should be investigated fall of 1966 to determine if further work is merited.

45LI6 (Mill Canyon Mouth) Must be examined during low water this fall. Critical area for potting.

45LI3 (Little Falls) Should be checked during low water preferably late fall when vegetation is sparse.

45LI4 (Spring Creek) Big habitation site, should be excavated either the spring or summer of 1967 before it becomes known to collectors.

Near Future

(Should be investigated during the next two years)

45LI5 (Le Brett Talus Pits) Near critical potted area.

45LI11 (Hawk Creek Talus Pits) Easily visible and accessible from the road.

45LI13
14
15
16
17 (Hawk Creek Caves) Further testing required. Should be handled as a unit.

45LI19 (Kaufman Canyon Site) Extremely interesting canyon, large open area, likely habitation site and burial area. Surface finds indicate aboriginal use.

45LI22 (Long Lake Dam Site) Not on government land. Owner should be contacted, site inspected.

45LI7 (Wally Sower's Draw) Site recorded from second-hand knowledge only. Field inspection required. Area very likely.

No Action Necessary for Salvage Reasons

45LI8 (Detillion Settlement)

45LI10 (Fort Spokane Sewer and Dump)

45LI12 (Bluestem-Peach Railroad)

45LI18 (Moonshiner's Place)

45LI20 (Gladys Price Ranch Site)

45LI21 (Cayuse Bay Cairn)

Unnumbered Sites, on North Side of River

Top Priority

Cayuse Spit Long House Cayuse Spit Habitation Area	Rich sites, exposed only at low water. Well known to local collectors. Should be salvaged first low water winter '66-'67. See comments on Mill Canyon Basin.
Kuntzville (Peter Dan Creek)	Rich site, primary exposure at low water. Favorite collecting area for local collectors.
Elmer City	See comments on Kuntzville.
Kettle Falls Bridge Burials	Exposed by erosion, area should be excavated before further destruction occurs.
Fort Spokane Bridge Burial	Check bank. Not believed active now.

Areas requiring further investigation

Cayuse Flat Burial Area	Should be checked in conjuncture with the Mill Canyon Mouth area.
Sandy Spit Pictographs	Fading from exposure; should be recorded and photographed as soon as possible.
Spokane River Gorge Site	Requires further testing.
Sanpoil Campground	Requires further testing.

No Action Necessary for Salvage Reasons

Trinity Bay	Potential area, but probably never exposed enough even at maximum drawdown.
Keller Ferry Blade Find	Probably only a chance find, area gives no indication of aboriginal use.
"Tipi Mounds"	Assessed to be of geological interest only.
Old Keller	Town site. Not in danger of destruction.

III. SOURCES OF INFORMATION

List of Informants

United States Government

Department of the Interior

National Park Service
(Coulee Dam National Recreation Area)
Headquarters at Coulee Dam

	Interviewed
Robinson, Homer W., Superintendent	3 Aug.
Woodbury, Charles P., Chief Ranger	15 Aug.
Drysdale, Albert F., Supervisory Park Ranger	4 Aug.
McCrary, Paul F., Park Naturalist	
Strock, Ruth, Administrative Assistant	4 Aug.

Fort Spokane (District Office)

Burns, Robert A., Supervisory Park Ranger	6 Aug.
Gale, Richard T., Park Ranger	6 Aug.
Brown, Ralph, Seasonal Ranger	6 Aug.
Randall, Lee W., Maintenance man	6 Aug.

Kettle Falls (District Office)

Anderson, Carl V., Supervisory Park Ranger	2 Aug.

Bureau of Reclamation

Seely, Ray, Chief of Power, Field Division Coulee Dam	26 Aug.
Mutch, Tom, Head, Property Office, Bureau of Reclamation, Ephrata	5, 26 Aug.

Bureau of Indian Affairs

Nelson, Cleveland, Supervisor, Colville Realty-Property Office

United States Geological Survey

Yates, Robert, Geologist

Department of Agriculture

Soil Conservation Service

Spokane

Chapin, Ray W., State Soil Scientist

Davenport

McColley, Phillip D., Soil Scientist 6 Sept.

Randall, Robert, Soil Conservationist 24 Aug.

Carpenter, Ken, Soil Conservationist 24 Aug.

Wilbur

Zimmer, William, Work Unit Conservationist 26 Aug.

Colville

Donaldson, Norman C., Soil Scientist

Hougland, Floyd W., Work Unit Conservationist

Republic

Zulauf, Alan S., Soil Scientist

Schenck, John F., Work Unit Conservationist

Agricultural Stabilization & Conservation Service

Salt Lake City

Tomsheck, William H., Chief Western Laboratory

Davenport

Wimmer, Robert, A.S.C.S. Office

State Government

Eastern Washington State Historical Society

Conn, Richard G., Director (now chief, Division of Human History, Manitoba Museum of Man and Nature Aug.

Washington State University

Campbell, Charles D., Geologist 2 Aug.

State of Washington Department of Conservation

Thorsen, Gerald W., Geologist, Division of Mines and Geology

Reichert, William H., Librarian, Division of Mines and Geology

Private Individuals (listed alphabetically)

Armstrong, Herbert. From Harrington; intelligent informant but only recently acquainted with the Spokane River. Does not know the area too well. Interviewed 18 August.

Ball, Howard T. Spokane County Commissioner. Did grave removal on "Re-interment Project" of 1939-41. Interviewed by R. Sprague 1965.

Becher, Ed. High school teacher at Rogers. Local historian, Spokane area particularly. Reference from R. G. Conn; not interviewed.

Beck, Mrs. W. O. Lives in Seaton's Grove. Enthusiastic collector. All material is from within an 18 mile radius of her home. She is very willing to work with professionals, wants to learn proper archaeological techniques and preserve sites. Should be consulted for further references. Interviewed 27 August.

Berryman, Len. Retired Corps of Engineers, Bridgeport. Reference from Mrs. Beck. Has provided her with maps; wants to help preserve relics. Not interviewed.

Bennett, Jack. Lawyer, lives in Millwood. Local collector who still frequently digs; reference from Mrs. Brock. Not interviewed.

Brock, W. O. E. 8721 Grace, Spokane. Has a large ethnographic collection purchased from Indians. Has some archaeological material but no knowledge of where it specifically came from; not personally collected. Interviewed 10 August.

Brons, Mrs. Florence, Colville. Owns land adjacent to Kettle Falls burial site. Interviewed by R. Sprague December 1965.

Cannon, Graver. Lives in Davenport. Reference from H. Robinson. Not interviewed.

Collier, Don. Lives north of Reardan. (Has land east of Little Falls at Long Lake.) Perhaps has pictograph site on his land. Reference from R. Randall. Not interviewed.

Copenhaver, Guy. Reference from W. Zimmer and M. Rettkowski. Not interviewed.

Hesse, W. M., town clerk of Republic. Has possession of a whale bone club found near the Kettle Falls bridge. Interviewed by R. Sprague December 1965.

Inglesen, Leonard. Wilbur. Reference from W. Zimmer and M. Rettkowski. Not interviewed.

Johnson, Oscar. Davenport. Reference from W. Zimmer and M. Rettkowski. Not interviewed.

Jones, Fred O. Spokane; now retired, acts as a consulting engineer-geologist. Formerly of Bureau of Reclamation, and USGS. Senior author of Landslides on the Columbia River. Knows the sedimentary deposits of the Columbia better than anyone. Interest primarily structural; not historical. Interviewed 8 August.

Kuntz, Hilary. Davenport. Reference from W. Zimmer and M. Rettkowski. Not interviewed.

Lancaster, Mr. and Mrs. W. Liberty Lake. Amateur archaeologists; have "talked to old people on Colville reservation about their camps on the Columbia, but found that they are mostly underwater." Interviewed 1 September.

Laughbon, Doctor. Davenport. Reference from H. Robinson. Not interviewed.

Maiden, "Kelly". Davenport. Reference from W. Zimmer and M. Rettkowski. Not interviewed.

McDowell, Dean. Husband and wife principal and teacher at elementary school in Lind. Avid collectors who "spend three months of the year [summers] traveling around looking for arrowheads." Live right across from Cayuse Spit; collect area every low water. Not interviewed.

Pfaffel, Willard. Works for the State Highway Department running Keller Ferry. Lives in one of the State houses there. Collects everything except Indian artifacts. Knows local area extremely well; has hunted region all his life. Knows local obsidian source. Interviewed 14 August.

Pryor, Mrs. Erma. Seaton's Grove. Sister to Mrs. Beck. Collected same local area, but lacks scientific interest in her collection. Interviewed 27 August.

Putnam, Mrs. Goldie. Inchelium. Long time resident of Inchelium area. Interviewed shortly before her death by R. Sprague December 1965.

Rabideau, Mr. and Mrs., Coulee Dam. Local collectors who have come to the Park service asking about the location of sites. Reference from C. Woodbury. Not interviewed.

Reed, Mrs. Truman. Retired director of EWSHS, check for further references. Reference from R. Conn. Not interviewed.

Reinbold, August. Davenport. Owns land around Miles. Reference from W. Zimmer and M. Rettkowski. Not interviewed.

Rettkowski, Max. Elderly German farmer interviewed at Wilbur. Abundant local information. 26 August.

Schoenberg, Fr. Wilfred P. Archivist. Gonzaga University, and Director of the Pacific N. W. Indian Center. Reference from R. G. Conn. Not interviewed.

Seaton, Sam. Reference from Mrs. Beck. Knows where old sites are that are now underwater above the dam. Not interviewed.

Thomson, John P. Spokane. Worked for Bureau of Land Management; now retired. Reference from G. Thurston or Dr. C. D. Campbell. Not interviewed.

Warren, Mrs. Earl. Wilbur. Grew up on Johnson Homestead at the mouth of Kaufman Canyon. Used to pick up arrowheads around the house. Knows about an Indian cemetery on or near the property, but has only a very vague knowledge of the location of things. Interviewed 26 August.

White, Mrs. Cull. (Widow of Cull White, noted local historian.) Runs a giftshop on the main street of Ephrata. Has all of her husband's notes and books. She would be happy to let qualified investigators look at these after she gets them organized. Interviewed 5 August.

Whitford, Jeanette. 15115 E. Broadway, Veradale, Wash. An Indian, should know about the groups who occupied the sites around Little Falls. She was involved with "middle or lower" Spokane group who settled at Worley, Idaho. Reference from R. G. Conn. Not interviewed.

List of Maps which have been Located which are Useful for This Survey of the Recreation Area

METZKER MAPS (3)

Scale, ca. 2 miles to 1 inch,
or 1:125,000

		No Date
Lincoln County	20" x 33"	
Ferry County	17" x 35"	
Stevens County	19" x 35"	

ORIGINAL OWNERSHIP MAPS 1-33

Franklin D. Roosevelt Lake

Coulee Dam, Wash. 2 Oct. 1947 222-P-4532

Comments:

- obtainable at N. P. S., Coulee Dam

- not augmented to date

- sheet size $34\frac{1}{2}$" by $19\frac{1}{2}$"

- scale 1 inch equals 1,000 feet (1:12,000)

- sheets 11 - 15 entitled SK
  #9 " SP
  #28, 29 " KR

- shows old riverbed and ownership before flooding (of land flooded, and bordering). (No topography.)

Set of Current Property Maps of the Recreation Area in Four Groups

Comments:

- obtainable at N. P. S., Coulee Dam

- show current property boundaries to date winter 1965-1966, old river bed and current lake margin. (No topography.)

- sheet size $34\frac{1}{2}$" by $19\frac{1}{2}$"

- scale 1 inch equals 1,000 feet (1:12,000)

Main Columbia River

Columbia Basin Project - Washington, Grand Coulee Dam Index Map #1 - 28

A441-1 (28) Colville, Wash. 27 Feb. 1937; revised 1938.

Spokane River Arm

Columbia Basin Project - Washington, Grand Coulee Dam Index Map No. SK 1-5

A441 - SK1 (5) Davenport, Wash. 25 Jan. 1936; not revised?

Sanpoil Arm

Columbia Basin Project - Washington Grand Coulee Dam Index Map No. SP 1-2

A441-SP1 (2) Colville, Wash. 28 Feb. 1937; revised 1937

Kettle River Arm

Columbia Basin Project - Washington Grand Coulee Dam Index Map No. KT 1-2

A441-KT1 (2) Colville, Wash. 24 June 1937; not revised?

U. S. Department of Commerce

Coast and Geodetic Survey

6168 - Franklin D. Roosevelt Lake, Southern Portion

6168 - Franklin D. Roosevelt Lake, Northern Portion

1st edition 22 Sept. 1952; revised 16 Dec. 1963

Comments:

- scale 1:50,000
- sheet size 33" by 43"
- soundings in feet
- contour interval 100 feet
- shows only topography and features useful for navigation and visible from water
- geographical names and spellings inconsistent with those on USGS Quads.

USGS GEOLOGIC MAPS

Preliminary Geologic Map of Part of the Turtle Lake Quadrangle

Lincoln and Stevens Counties, Washington

by George E. Becraft and Paul L. Weis

Mineral Investigations

Field Studies Map MF 135

1957

1:48,000

Contour Interval 40'

20" x 28"

Preliminary Geologic Map of the Hunters Quadrangle

Stevens and Ferry Counties, Washington

by Arthur B. Campbell and Omer B. Raup

Mineral Investigations

Field Studies Map MF 276

1964

1:48,000

Contour Interval 40'

$38\frac{1}{2}$" x 28"

Geologic Map of the Wilmont Creek Quadrangle

Ferry and Stevens Counties, Washington

by George E. Becraft

Map GQ 538

1966

1:62, 500

Contour Interval 40'

21½" x 25"

USGS TOPOGRAPHIC MAPS

Our No.*	Name	Index No.	Scale	Date	Size	Interval
1	Grand Coulee Dam, Wash.	N4745-W11845	15' scale 1:62,500	1948	17" x 21"	40'
2	Wilbur, Wash.	N4745-W11830	15' scale 1:62,500	1948	17" x 21"	40'
3	Lincoln, Wash.	N4745-W11815	15' scale 1:62,500	1950	17" x 21"	40'
4	Turtle Lake, Wash.	N4745-W11800	15' scale 1:62,500	1950	17" x 21"	40'
5	Wellpinit, Wash.	N4745-W11745	15' scale 1:62,500	1944	17" x 21"	25'
6	Wilmont Creek, Wash.	N4800-W11815	15' scale 1:62,500	1948	17" x 21"	40'
7	Hunters, Wash.	N4800-W1800	15' scale 1:62,500	1948	17" x 21"	40'
8	Inchelium, Wash.	N4815-W11800	15' scale 1:62,500	1950	17" x 21"	40'
9	Kettle Falls, Wash. (W½ only)	N4830-W11800	15' scale 1:62,500	1948	17" x 21"	50'
10	Marcus, Wash.	N4830-W11800	30' scale 1:125,000 (ed. of 1942 rpt)	1951	17" x 21"	100'
11	Colville, Wash.	N4830-W11730	30' scale 1:125,000	1929	17" x 21"	100'
12	Boundary Quad	N4852.5-W11737.5	7.5' scale 1:2,400	1952	22" x 27"	40'

*These sheets have been numbered in red ink in the upper left corner, starting at Grand Coulee Dam, and going more or less upstream to the Canadian Border.

BUREAU OF RECLAMATION PHOTOREDUCTIONS

Title:

FIELD MAPS AND NOTES

PRELIMINARY LANDSLIDE CLASSIFICATION
OF THE BANKS OF THE COLUMBIA RIVER

Reservoir - Columbia Basin Project, Wash.

by F. O. J., L. C. R., T. J. M.

19 Jun. 1944 to 28 June 1944, & 22 Jul. 1944 to 2 Aug. 1944

Field work from boat "Paul Bunyon"

Operated by Capt. Gaines Tuttle and Assistant R. S. Seely

List of Maps

Columbia River Maps 1-5 inclusive

Sanpoil River Maps 1-4 inclusive [See Notes]

Spokane River Maps 1 and 2 [See Notes]

Sheet size - about 20" by 18"

(The base maps on which the Bureau of Reclamation stenciled the information resulting from its studies of slides has the following printed legend:)

Plan of Columbia River

International Boundary to Rock Island

Rapids (below Wenatchee) Washington

Advance Sheet Subject to Correction

Sheet A (through E, five of original ten sheets)

Scale 1:31, 680 [See Notes]

Contour Interval on land 20 feet (See discussion in text)

Contour Interval on river surface 5 feet

H. H. Hodgeson, Division Engineer

Topography from aerial photographs by stereophotogrammetry [See Note]

Plane table Triangulation by C. N. Mortenson

Control by U. S. Geological Survey Surveyed in 1930

Comments:

- stenciled legend refers to notebooks of sections, photographs, profiles and field sketches

- photo reproduced and reduced to ca. 4/5 to 3/4 of stated scale, which is 1:31,500, therefore, at ca. 1:40,000

There must have been early aerial photographs to enable the USGS to make the base maps. These should be located.

BUREAU OF RECLAMATION ENLARGEMENTS OF PORTIONS OF USGS SHEETS

All enlarged to approximate scale of 1:24,000, except No. 17 (See Note)

Our No.	Name (if present)	USGS Quad from which taken	Size
1	Grand Coulee Dam	Grand Coulee Dam	21½ x 37"
2	Wilbur	Wilbur	36" x 35"
3	Keller	Keller (probably was a 30' Quad at 1:125,000)	26" x 24"
4	-----	Lincoln	40" x 35"
5	Turtle Lake	Turtle Lake	36" x 50"
6	Wellpinit	Wellpinit	24½" x 24"
7	Wilmont Creek	Wilmont Creek	29" x 37"
8	Hunters	Hunters	21" x 25"
9	(Hunters)	Hunters	24½" x 30"
10	-----	Inchelium	24½" x 30"
11	-----	Inchelium	25" x 30½"
12	-----	Marcus	25" x 30½"
13	-----	Marcus	25" x 30½"
14	Marcus	Marcus	34" x 36½"
15	-----	Marcus	34" x 36½"
16	-----	Colville	24½" x 30"
17	Marcus	Marcus (See Notes)	24" x 35"
18	Orient	Orient	24" x 14½"

Our numbers are put in green ink at upper left corner, and in green ink on back.

No. 17, "Marcus," is at a scale of 1:48,000, while all the others are 1:24,000. The area of the USGS Marcus Quad shown at small scale on No. 17 is shown at large scale on Nos. 14 and 15.

Aerial Photography

The Bureau of Reclamation has made a collection of 9" x 9" aerial photographs of the Columbia River Valley above Grand Coulee Dam (Lake Roosevelt) for its use at the Ephrata Office. This collection is made of scattered photographs from different flights. We have listed them in chronological order of photography, which is the way the pictures are filed. We have starred (*) those flights which cover the area of this survey.

Index No.	Exposure No.	Date
*COD-9N	45 L-54	26 Oct. 1954
*DCZ-2P	189-191	13 Jul. 1955
*DCZ-3P	193-201	18 Jul. 1955
*DCZ-6P	37-39, 45-47, 195-198	19 Jul. 1955
BBD-22T	7-8, 10-14, 18-21, 42, 43, 81-86, 91-93, 95-104, 109-114, 150-152, 166-169, 181-187	26 Jul. 1957
BBD-23T	41-55, 92-99	26 Jul. 1957
BBD-27T	4-6, 73-75, 101-103	16 Aug. 1957
BBD-28T	33-35, 38-39	17 Aug. 1957
BBD-31T	204-206	22 Aug. 1957
BBD-32T	8-10	22 Aug. 1957
BBD-33T	59-63	11 Sept. 1957
*AAO-11T	80-83, 167-174, 177-179	29 May 1957
*AAO-12T	40-42, 49-53, 135, 145-149	29 May 1957
*AAO-13T	27-36	29 May 1957
*AAO-16T	56-58, 136, 137	30 Jun. 1957
*AAO-21T	175-178, 187-189	24 Jul. 1957
*AAO-23T	175-177	14 Jul. 1957
*AAO-24T	3-6, 177-182	15 Aug. 1957
*AAO-25T	171-173	16 Aug. 1957
*AAO-26T	51-53	17 Aug. 1957

The Soil Conservation Service office of the Department of Agriculture in Davenport holds a series of early (1937-1939) photographs. As these were taken before the flooding from Grand Coulee Dam, they are extremely valuable. Unfortunately the collection is incomplete, but we found at least some coverage of all the Spokane River from Long Lake Dam to the mouth, and of the Columbia from that point to the present-day town of Lincoln. It is almost certain that these early flights covered all of Lincoln County, but unfortunately the mosaic no longer exists at the Davenport Office of the SCS or ASCS (Phillip D. McColley, Personal Communication, 6 Sept. 1966). We have indicated the area covered by the beginning and end of each flight strip and the direction of flight. They are filed in the numerical (and chronological) order in which we have described them. Some investigation should be started (by writing William H. Tomscheck at Salt Lake City) to find out more about these early flights.

The Davenport Office also holds some 1957 photography, in the same series of flights as that represented in the Ephrata collection of the Bureau of Reclamation, but is further east.

AAO-3-2 8 Sept. 1937

Unknown location on Columbia River, at point where it is running from North to South. Presumably somewhere North of Fort Spokane and mouth of Spokane River.

AAO-8 14 Sept. 1937

"1/20,000"

45 Long Lake Dam to just above Little Falls Dam

89 Little Falls Dam and surroundings

138 Little Falls Dam to about 3 mi. downstream

139 Little Falls Dam to about 5 mi. downstream

45 has site of fishing grounds (camp?) at Little Falls (45LI3)

139-39 show "Tipi Mounds"
and Spring Creek Site (45LI4)

AAO 43-9 20 Oct. 1938

From Long Lake Dam downstream to within a mile or two above Little Falls Dam.

AAO-223-88 8 Jul. 1939

Good picture of Hawk Creek, from Falls, to confluence with Columbia River.

Sites of five caves can be spotted and valley flat shows well, as does the railroad grade (45LI12 through 17).

AAO-224-#	1	N	Flat across River from Fort Spokane
8 Jul. 1939	through	to	
	8	S	Mouth of Hawk Creek
	104	S	Fort Spokane in upper left corner
	through	to	
	107	N	Five miles upstream from Fort Spokane bridge "AAA - 1:20,000"
AAO-225	3	N	Three miles upstream of Bridge at Fort Spokane
8 Jul. 1939	through	to	
	4	S	Five miles upstream of Bridge at Fort Spokane
	105	S	Center of Sand Flat
	through	to	
	107	N	Harrington Boat Club
AAO-226	52	S	Pitney Point to Porcupine Bay
12 Jul. 1939	through	to	
	54	N	Porcupine Bay to Sandy Spit
	59	N	Northwest third of Sand Flat
	through	to	
	64	S	Half-way from Sand Flat to Mill Canyon

54 shows Detillion Settlement (45LI8)

AAO-227	34	S	Basin where Mill Canyon and Heartline Creek enter the Spokane River
12 Jul. 1939	through	to	
	38	N	Southeast corner of Sand Flat at lower left corner
	39	N	LeBrett's farm to left center (this set is about one-half frame of 34 through 38)
	through	to	
	42	S	Mill Canyon Basin centered

The Wilbur office of the Soil Conservation Service holds the 1957 flight, and also holds a 1951 flight, which shows a number of features which have since changed. The Swawilla Basin area of interest is covered by photographs.

AAO-6G	6 and 7	Plumb Point to Cayuse Bay	30 Jul. 1951
	83 and 84	Cayuse Bay to Kaufman Canyon	30 Jul. 1951
	208	Kaufman Bay	10 Aug. 1951

Ethnographic Manuscript

Included is a copy of an unlabeled manuscript which exists as a carbon copy in the "Indian-History" file in the Naturalist's Desk at the N. P. S. Headquarters Office at Coulee Dam. None of the personnel at that office have any knowledge of its origin or author. It appears to be a transcription of an interview with an Indian, Billy Curlew, concerning Indian campsites (presumably all ethnographic) from Coulee City north to Belvedere. The whereabouts of the site map referred to in Item 20 is unknown.

1. One-half mile north of Belvedere along creek was a large campground. A large number of people lived there, 25-50 houses, perhaps more. Nez Perce, Umatilla, Moses Columbia & Okanogan Indians lived here. Called Sun-ka-cash-kun by Indians.

2. Next to road at Belvedere is trail to Okanogan Country, one of main trails. Runs southward to Sanpoil and North to Canada (Okanogan Lake). It ties into "Caribou Trail" in the vicinity of Okanogan.

3. At Belvedere was a camp on both sides of former creek (W. of road). Our informant said that the Indians had to camp in groups for protection against other Indians and whites. From 200-500 people. Called K-choo-ka-ma-utz ("little creek runs through flat"). Indians used to hunt bear at Belvedere.

4. One-half mile upstream from Belvedere, on same side of river (at Stevenson's ferry) was a very large camp. It was a natural crossing. The Indians swam horses across the river here. The trail crossed the river here and then went south, through the Coulee, and then turned west to Ellensburg and Wenatchee. There is a graveyard at the site (fenced in). The Indians want it moved to higher ground when area is flooded. Called S-al-quash-wil ("trail ends in the river").

5. 3/4 miles upstream from Belvedere is another part of same camp. Chief Moses' group camped here. They often played a game called "shinny" (the same principle as that played by modern schoolboys).

6. 1/4 mile upstream from site #5 is another campground. Here can be seen the remains of a dirt fence approximately 4' high, built around a garden area. They grew corn and potatoes. Called U-cha-oox ("a trench (dirt) around a field").

7. Camp below bluff on E. side of road (at spring). Formerly heavy brush here. 1/2 mile upstream from #6. Called K-o-en-a-quink ("a bow").

8. One mile above Stevenson's Ferry on both sides of creek on East Bank. Kwo-klin ("birch").

9. Camp about 1/4 mile downstream from Indian graveyard (#4), on bank of river. U-a-i-sa-kun ("Turtle Lake"). The river forms a lake here at low water.

10. A cliff east of road where the Indians drove the deer off the cliff. They constructed fences at several places to direct the deer to the top of cliffs. Called S-kil-kh ("drift fence").

11. Large camp on first bench above highway through Koontzville. [See reference to site at Kuntzville reported by Mrs. Beck]. It was a winter camp. Called M-sal-o.

12. Approximately 2 miles below the dam on the west bank of river is a creek (place called Washington Flats). [Area designated on USGS Grand Coulee Dam Quad. Secs. 19 & 30, T. 29N., R31E.]. The Indians camped there to fish for salmon. They built salmon scaffolds on east side of the river. Many salmon caught there. Called S-na-ca-tian-tin ("fishing ground").

13. Rattlesnake Canyon [only reference to "Rattlesnake Canyon" found on C&GS navigation chart Lake Roosevelt, Southern Half, designated to be just west of Eden Harbor]. Was a winter village. There was a winter place for deer near there. Much game and also the Indians tended gardens. Called S-na-wah-kh.

14. Camped at Spring West of highway between Coulee Dam and Electric City. They gathered "service berries" here. (Temporary camp.)

15. On east side of Coulee, SE of Osborne is a creek - a very large camp there; trail through Coulee passed here. Used terrace on Coulee wall for pasture for horses. Called Kma-taia-kem. This was a temporary camp.

16. Large sand dunes west of Osborne show evidence of being a former campsite. Too old a site to be remembered by our informant, Billy Curlew.

17. Site on place of Oscar Osborne homestead. There was a spring here and large camas roots grew on top of N. W. coulee wall above site. Indians also collected duck eggs here. Called Ta-ta-cut ("a lake"). Also occupied large cave in Coulee wall to north in stormy weather.

18. Site on Charlie Osborne homestead. Large spring. They gathered camas roots here. Trail led to top of coulee wall. (No evidence found.)

19. Long Ranch - used to be a campsite around spring. A temporary campground. (No evidence found.)

20. Pictographs on rocks (see map)

Brand of Moses' nephew - Tcho-l-ocha

Chief Moses' brand

Sk e--ak-weloh

Brand of Moses' brother, Louie

Brand of Wild Jim T-wi-chan-ous

Brand of Jim Homas

Brand of Wa-awa-i (Billy Curlew's mother-in-law)

Brand of David Nanamkin (interpreter's father)

Brand of Spo-hi

Brand of Kum-Kum-pos-in

From Palouse - Koot-s-ala

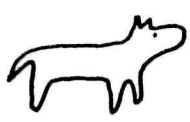
Brand of Tommio - son of Kamiakin

Unknown

Unknown

Brand of Kum-Kum-Chinahan

Brand of Tenas Louie


Means many horses around

Snow-tun-ik (Mrs. Peter Paul)

Brands are placed on rocks for benefit of foreigners so they will know that there are horses around to trade. Placed along trail.

Means many. The more hands, the more of anything indicated. In this case, horses.

Swawilla brand

Brand of daughter of Kamiakin

This place called Sk-kai-yatsh. ("Marks on rocks")

21. Camp located on terrace north of entrance to Northrup Canyon - several pit houses and pictographs on walls of rock.

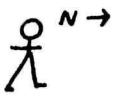
Lots of people

An eclipse coming

Called U-ka-wam-an

22. A big camp in Lovers' Lane (temporary). The trail passed through here. They built rope fences across both ends to keep stock in this natural corral. Called S-ki-usk ("gap"). Pictographs on rocks at south end of gap on W. Rocks.

Star



Many people going north

23. Along Northrup Creek, between highway and Devils Lake - a large camp. Called Ts--a-ca-wah ("a butte in the middle of the Coulee"). This is the name they apply to Steamboat Rock. The Indians want to see all or at least some pinnacle of Steamboat Rock called by this name.

24. Large - trail through Northrup Canyon and Barker Canyon, around south end of Steamboat Rock.

25. Permanent camp site at mouth of Northrup Canyon. It was at crossroads of N-S and E-W trails. Called N-ka-wa-mon.

26. Large camp at spring on east wall of Coulee (Section 23). Called Tk-Tk-hinch-spm ("cottonwood trees").

27. A campground was made around spring on flats S. of Steamboat Rock (Sec. 2). Called A-st-i-al-kin ("the head of the spring"). This name infers that the spring must be a large flowing spring with much water.

28. A trail goes up Coulee wall through a gap (Sec. 28) - goes to Wilbur and leads into main trail.

29. Campground at spring by cottonwood trees (Sec. 31).

30. Spring at foot of talus. The Indians camped here when they came to gather "toolman" - the Indian paint. It was gathered on a ledge approximately 100' from top of Coulee wall - where spring emerges.

31. At heavy spring (Sec. 26) was a camp site. Called Nl-scok ("a big patch of brush against a bluff").

32. Caves on East wall of coulee. All were occupied intermittently according to informant. Located approximately opposite site 31.

33. Big spring against W. Wall of Coulee. A permanent campground. Called N-Mal-l-capn.

34. Big spring at east end of Coulee City called N-ka-stat-kwak-u ("water cress").

Note on Some Historical Sources

In order to see whether some readily available historical sources would give information useful for this survey of archaeological resources, they were examined. The results were generally negative, but will be reported in order

to avoid duplicate research. The fact that no specific sites are mentioned or identifiable does not mean that these same sources might not be useful for other research on the area.

Cox, Ross. The Columbia River.

Cox tells of a number of trips from Spokane House to Fort Okanogan, but gives no information about the countryside he is passing through and does not mention any sites. In 1813 he left Spokane House on the 25th of May and arrived at Fort Okanogan on the 30th (1957: 117). He left Spokane House also on the 22nd of November and arrived at Fort Okanogan on the 25th of November and then returned going by horseback (1957: 130-31). In 1814 he left on the 25th of May and arrived at Fort Okanogan on the 29th of May (1957: 155), and on his way back up the river, having gone to the mouth, he left Fort Okanogan on the 27th of August and arrived at Spokane House on the 31st (1957: 183). Apparently he returned to Fort Okanogan because he left there again on the 13th of December, 1814, and arrived at Spokane House about the 17th, again on horseback (1957: 206). He left Spokane House in the spring of 1815 (1957: 211) and returned overland by the 12th of May (1957: 213). In the fall of 1815 he left on the 26th of October and travelled on his way to Fort George (1957: 218). He returned to Spokane House in the spring of 1816, arriving from Fort Okanogan on the 9th of March (1957: 227). Almost immediately he turned around and left on the 20th of March to go downriver (1957: 228). It is apparent that almost all of these trips were made on horseback, due to the difficulty of navigating the Spokane River.

He gives no descriptions of settlements as such but says:

> "The Spokans have a small village at the entrance of their river, but their chief and permanent place of residence is about 40 [sic] miles higher up where we built our fort and where the Pointed Heart [Little Spokane] joins Spokane from the southeast." (1957: 261).

He gives some description of the Kettle Falls Settlement which was a major one (1957: 189) and mentions a settlement about half way between Kettle Falls and the mouth of the Spokane.

> "We visited a small tribe, consisting of not more than fifteen families, who occupied a few hunting lodges about midway between Spokane House and the Chaudière [Kettle] Falls " (1957: 190).

He then gives a description, saying the dialect is like the Kettle Falls in Spokane, that there is good hunting and particularly game birds. He is also fascinated by an apparently transvestite chief, the probability of which Erna Gunther questions, as noted by the editors. His only other reference to the area between the mouth of the Spokane and Kettle Falls is for May, 1817. Then the run-off water was so fast that the party had to draw their canoes. He camped opposite the mouth of the Spokane on the 13th of May, 1817, and portaged. They nearly reached Kettle Falls that day, and "met a couple of families of poor beggarly Indians." (1957: 273). He does not describe in any way the area downstream from the

mouth of the Spokane, most probably because he made the trip to Fort Okanogan by horseback, and did not travel down the Columbia River very often. In any event, Cox does not seem to give detailed descriptions except of areas that specifically interest him.

Merk, Frederick, Fur Trade and Empire, George Simpson's Journal. 1931. Simpson had a somewhat better opinion of the natives, although he had a very low opinion of the business profitability of Spokane House, and closed it. On the 26th of October, 1824, after portaging the rapids below the "Grand Rapid" below Kettle Falls, he "passed a great number of Indian Lodges and Encamped about an hour after dark . . . [morning of Wednesday, October 27, 1824] the country still continues very beautiful and the Banks of the River studed [sic] with Indian Lodges." (1931: 42). Simpson then describes how the Indians lived and what items of trade they need. After arriving at the "Forks of the Spokane River" he says "Spokane House is about 60 miles to the Southward of this place on the Banks of the River of the same name, it is not navigable at this season I mean therefore to leave my craft and people here and proceed further on Horseback tomorrow." He then describes his horseback ride, the countryside, and the frequent views of the "winding course of the river." (1931: 43).

After completing his business he rode back to the mouth of the Spokane River on the 30th of October. The next day he passed the mouth of the Sanpoil. "The country now becomes dreary and wretchedly sterile scarcely a shrub to be seen and merely here and there a solitary Red Pine. Saw a few Indians collecting the exhausted fish that float down the surface of the Water half dead and alive, they are quite putrid and have scarcely strength to move out of the way of the Fisherman." (1931: 49). He has nothing further to say about the country until he is returning upstream the following spring. On the 6th of April, 1825, Simpson travelled upstream to "a couple of Leagues below the San Poil River. Thursday, April 7th made an early start; at the San Poil River found a band of Indians from whom we borrowed Horses and proceeded overland to the Forks of the Spokan River a distance of about 25 to 30 miles . . ." (1931: 133). On the 8th of April he discussed closing down Spokane House, a major reason for which was the "very heavy expence and serious inconvenience in transporting the Outfits and returns between the Main River [Columbia] and the present Establishment by Land a distance of about 60 Miles . . ." (1931: 134). Simpson stayed at the mouth of the Spokane River from the 7th until late on the 12th. This was a season of rainstorms and hail, and there had been much blowing sand below the Sanpoil. Following this Simpson describes interviews at Kettle Falls, and the laying out of Fort Colville there. There is no further description of the land or people in the area of concern to this report.

Stevens, Isaac Ingalls. Narrative and Final Report of Exploration for a Route for a Pacific Railroad Near the Forty-Seventh and Forty-Ninth Parallels of North Latitude from St. Paul to Puget Sound. 1860.

On the 24th of October in 1853 members of the survey party visited the site of "Chemakane Mission." There is no description of the countryside (1860: 148). In 1855 the area was again visited, but there is again no description (1860: 225).

Other historical sources which might contain chance references to sites along the Spokane or the Columbia from the mouth of the Spokane to the Grand Coulee Dam area are the writings of the naturalist, David Douglas (1914), the German naturalist, Charles A. Geyer, (1845), the Journal of Alexander Ross (1855), David Thompson (Elliott 1914a, 1917), or John Work (1944, Elliott 1909, 1914b, 1915, Lewis and Phillips 1923) the Hudson's Bay Company employee who was responsible for closing out Spokane House. There are ample reports of life at the trading establishments, such as Fort Spokane, and later Fort Colville, but it appears that the historical sources give relatively little attention to the exact location and description of villages in the intervening countryside. Another historical source which might be of use would be pertaining to U. S. Army Fort Spokane. Among the papers related to this there is apparently a reference to the officers and their families and Indians, fishing at the mouth of Hawk Creek. The reference could not be readily found, but further research should produce it.

These and similar sources should be searched as this survey progresses. It might also be worthwhile to have a thorough study made of Columbia Basin newspapers in the towns surrounding the area in question. This would be like the study of newspaper articles made for Fort Spokane by the National Park Service. Our experience is that there is a concentration of information in the late 1930's and early 1940's, as sites were being flooded by Grand Coulee Dam. This should be intensively and exhaustively researched.

BIBLIOGRAPHY

BRETZ, J. HARLEN

1959 Washington's Channeled Scablands. Division of Mines and Geology Bulletin No. 45. Olympia.

BRETZ, J. HARLEN, H. T. U. SMITH AND GEORGE E. NEFF

1956 Channeled Scabland of Washington: New Data and Interpretations. Bulletin of the Geological Society of America, Vol. 67, pp. 957-1049. New York.

CAIN, H. THOMAS

1950 Petroglyphs of Central Washington. University of Washington Press. Seattle.

CAMPBELL, CHARLES D.

1962 Introduction to Washington Geology and Resources. Division of Mines and Geology Information Circular No. 22. Olympia.

DAUGHERTY, RICHARD D.

1962 The Intermontane Western Tradition. American Antiquity, Vol. 28, No. 2, pp. 144-50. Salt Lake City.

FRYXELL, ROALD

1961 Geologic Field Examination of the Park Lake Housepit Site (45GR90) Lower Grand Coulee. Washington State University, Laboratory of Anthropology, Report of Investigations No. 9. Pullman.

FRYXELL, ROALD AND EARL F. COOK

1964 A Field Guide to the Loess Deposits and Channeled Scablands of the Palouse Area, Eastern Washington. Washington State University, Laboratory of Anthropology, Report of Investigations No. 27. Pullman.

FRYXELL, ROALD AND RICHARD D. DAUGHERTY

1963 Late Glacial and Post Glacial Geological and Archaeological Chronology of the Columbia Plateau, Washington. Washington State University, Laboratory of Anthropology, Report of Investigations No. 23. Pullman.

FULLER, CECIL ROBB, JR.

1961 Cataloguing and Setting up Display Cases of Prehistoric Upper Columbia River Area Artifacts. Typescript, Eastern Washington State Historical Society Museum. Spokane. (Describes the job of cataloguing the 55% of the Collier, Hudson, and Ford collection which is said to be housed at the museum.)

MALLORY, OSCAR L.

1962 Continued Archaeological Appraisal of the Lower Grand Coulee, Central Washington. Washington State University, Laboratory of Anthropology, Report of Investigations No. 14. Pullman.

NELSON, CHARLES M.

1965 Archaeological Reconnaissance in the Lower Monumental and Little Goose Dam Reservoir Areas, 1964. Washington State University, Laboratory of Anthropology, Report of Investigations No. 34. Pullman.

NELSON, RUTH A.

1953 Plants of Rocky Mountain National Park. Washington.

PALMER, EDWARD

1966 Food Products of the North American Indians. Washington Archaeologist, Vol. 10, No. 1, pp. 5-31. Seattle.

RAY, VERNE F.

1933 The Sanpoil and Nespelem. University of Washington Publications in Anthropology, Vol. 5. Seattle.

RICHMOND, G. M., R. FRYXELL, G. E. NEFF, AND P. L. WEIS

1965 The Cordilleran Ice Sheet of the Northern Rocky Mountains, and Related Quaternary History of the Columbia Plateau. The Quarternary of the United States, pp. 231-42. Princeton University Press. Princeton.

WOODWARD, ARTHUR

1965 Indian Trade Goods. Oregon Archaeological Society Publication No. 2. Portland.

REFERENCES

COLLIER, DONALD: ALFRED E. HUDSON, AND ARLO FORD

1942 Archaeology of the Upper Columbia Region. University of Washington Publications in Anthropology, Vol. 9, No. 1, pp. 1-178. Seattle.

COX, ROSS

1957 The Columbia River. Edited by Edgar I. Stewart and James R. Stewart. University of Oklahoma Press. Norman.

DOUGLAS, DAVID

1914 Journal Kept by David Douglas During His Travels in North America 1823-1827. W. Wesley and Son. London.

ELLIOTT, T. C.

1909 Journal of John Work. Oregon Historical Quarterly, Vol. 10, No. 3, pp. 293-313. Portland.

1914 Journal of David Thompson. Oregon Historical Quarterly, Vol. 15, No. 2, pp. 104-25. Portland.

1914 Journal of John Work, June - October 1825. Washington Historical Quarterly, Vol. 5, No. 2, pp. 83-115. Seattle.

1915 The Journal of John Work: July 5 - September 15, 1826. Washington Historical Quarterly, Vol. 6, No. 1, pp. 26-49. Seattle.

1917 David Thompson's Journeys in the Spokane Country. Washington Historical Quarterly, Vol. 8, No. 3, pp. 183-7, No. 4, pp. 261-4. Seattle.

GEYER, KARL A.

1845 Notes on the Vegetation and General Character of the Missouri and Oregon Territories; by Charles A. Geyer. London.

JONES, FRED O., DANIEL R. EMBODY, AND WARREN L. PETERSON

1961 Landslides Along the Columbia River Valley Northeastern Washington. Geological Survey Professional Paper 367. Washington.

LEWIS, WILLIAM S. AND PAUL C. PHILLIPS

1923 The Journal of John Work (1831-32). Arthur H. Clark Co. Cleveland.

MERK, FREDERICK

1931 Fur Trade and Empire; George Simpson's Journal. Harvard University Press. Cambridge.

OSBORNE, DOUGLAS, ROBERT CRABTREE, AND ALAN BRYAN

1952 Archaeological Investigations in the Chief Joseph Reservoir. American Antiquity, Vol. 17, No. 4, pp. 360-73. Salt Lake City.

PICKERING, CHARLES

1863 The Geographical Distribution of Animals and Plants. Gould and Lincoln. Boston.

RODGERS, H. THOMAS

1942 A Botanical Survey of the Upper Columbia River Region Washington. Research Studies of the State College of Washington, Vol. 10, No. 2, pp. 99-140. Pullman.

ROSS, ALEXANDER

1855 The Fur Hunters of the Far West; A Narrative of Adventures in the Oregon and Rocky Mountains. Smith, Elder and Co. London.

SHARSMITH, CARL W.

1939 New and Otherwise Noteworthy Northwestern Plants - III. Research Studies of the State College of Washington, Vol. 7, No. 3, pp. 154-60. Pullman.

SPOKANE DAILY CHRONICLE

1966 Record 142-foot Pool Drop Looms. 80th. year, No. 297, p. 6, Spokane.

SPOKESMAN-REVIEW

1966 Dry Winter May Force Robbing Lake Roosevelt. 84th year, No. 101, p. 6. Spokane.

STEVENS, ISAAC I.

1855 Report of Explorations for a Route for the Pacific Railroad, near the Forty-seventh and Forty-ninth Parallels of North Latitude, from St. Paul to Puget Sound. In "Report of Exploration and Surveys, to Ascertain the most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean," 33rd. Congress, 2nd. Session, Senate Executive Document No. 78, Vol. 1. Washington.

1860 Narrative and Final Report of Explorations for a Route for a Pacific Railroad, near the Forty-seventh and Forty-ninth Parallels of North Latitude, from St. Paul to Puget Sound. In "Report of Exploration and Surveys, to Ascertain the most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean," 36th Congress, 1st. Session, House Executive Document No. 56, Vol. 12, Book 1. Washington.

WORK, JOHN

1944 The Journal of John Work, 1835. British Columbia Historical Quarterly, Vol. 8, pp. 127-46, 227-44, 307-18. Victoria.