NATIONAL WETLANDS INVENTORY

MAP REPORT

FOR

NORTHEAST UTAH

COLORADO PLATEAU AND ROCKY MOUNTAIN FOREST PROVINCE

The 1:100,000 Map Units of

Price NE, Price SE, Price NW, Price SW,
Salt Lake City NE, Salt Lake City SE, Vernal NW,
Vernal SW, Grand Junction NW, Grand Junction SW

U.S. Fish and Wildlife Service
Denver, Colorado
April, 1995

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I. INTRODUCTION

The United States Fish and Wildlife Service's National Wetlands Inventory (NWI) is producing maps showing the location and classification of wetlands and deepwater habitats of the United States. Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. (1979) is the document used by the NWI to define and classify wetlands. Photo interpretation conventions, hydric soils lists and wetland plant lists are also used to implement the Cowardin classification system.

The purpose of this map report is to: (1) provide information on the production of NWI maps, including narrative on photography and interpretation; (2) provide a descriptive crosswalk from NWI wetland codes on the map to common terminology and to representative plant species found on specific wetland sites; and (3) describe local geography, climate, and wetland communities.

II. FIELD RECONNAISSANCE

Field reconnaissance is a necessary procedure in order to accurately interpret aerial photography. Photographic signatures are correlated to the wetland habitat in the field. Collateral information including vegetative communities, soil types and topographic setting are further evaluated to aid in the photointerpretation process. This information is evaluated for seasonality and conditions existing at the time of photography and at ground truthing.

Project Area

The Northeast Utah study area is located in the Rocky Mountain Forest and Colorado Plateau Provinces. Field Reconnaissance covered the area's of ten (10) 1:100,000: Price NE, Price SE, Price NW, Price SW, Salt Lake City NE, Salt Lake City SE, Vernal NW, Vernal SW, Grand Junction NW, and Grand Junction SW. (Appendix A Locator map)

Field Personnel

Chuck Elliott	-	U.S. Fish and Wildlife Service
Lynn Wilson	-	Geonex, Inc.
Jaymes Pardue	-	Geonex, Inc.
Jeanne Murphy	-	Geonex, Inc.

Field Dates

May 22 - June 1, 1994

Aerial Photography

Primary Source Data (100%)
Type: NHAP Color Infra-Red High Altitude
Scale: 1:58,000

Price NE; 8/5/85, 8/7/85, 8/14/85, 8/15/85, 7/28/86, 7/31/86

Price SE; 8/5/85, 8/7/85, 8/14/85, 8/15/85, 7/28/86, 7/31/86

Price NW; 7/31/85, 8/7/85, 8/14/85, 8/15/85, 9/5/86, 9/15/87, 9/28/87, 10/2/87

Price SW; 7/31/85, 8/7/85, 8/14/85, 8/15/85, 9/5/86, 9/15/87, 9/28/87, 10/2/87

Salt Lake City NE; 7/4/81, 9/26/81, 9/1/82, 9/23/82, 9/6/83

Salt Lake City SE; 7/4/81, 9/15/81, 9/23/82, 9/6/83

Vernal NW; 9/2/82, 8/27/83, 9/11/83, 9/12/83, 9/20/83, 9/21/83, 8/30/84

Vernal SW; 9/2/82, 8/27/83, 9/5/83, 9/11/83, 9/12/83, 9/20/83, 8/30/84

Grand Junction NW; 8/27/83, 9/5/83, 9/11/83, 9/12/83, 9/13/83, 8/30/84

Grand Junction SW; 9/5/83, 9/11/83, 9/20/83

Percentage Coverage: All 320 USGS quadrangles were covered with the NHAP photography.

Collateral Data

United States Geological Survey (U.S.G.S.) Quadrangles

Cowardin's Classification of Wetlands and Deepwater Habitats of the United States

Bailey's Description of the Ecoregions of the United States

Soil Conservation Service Soil Surveys

Hydric Soils of the United States

Hydric Soils of the State of Utah

Wetland Plants of the State of Utah, 1986

National List of Plant Species That Occur In Wetlands: Intermountain (Region VIII)

U.S.G.S. Water Resources Data Utah, 1993

III. PHYSICAL DESCRIPTION OF PROJECT AREA

Geography

The Northeast Utah study area lies in the Rocky Mountain Forest and the Colorado Plateau Provinces as defined by Bailey's Description of the Ecoregions of the United States (1980).

The majority of the study area is located in the Rocky Mountain Forest Province. This ecoregion consists of numerous high altitude mountains ranging in elevation from 8,000 to 14,000 feet. The Wasatch Range, San Pitch, and Uinta Mountain ranges are present in the Northeast Utah study area. Numerous saturated emergent areas cover these mountains and beaver activity is present throughout. Extensive forested areas also cover this area and include many national forests such as Wasatch, Uinta, Fishlake, and Manti-La Sal National Forest. River systems such as the Sevier, Uinta, and Duchesne Rivers flow through this province.

The Colorado Plateau Province occupies the southern and east central portion of the study area including Dinosaur National Monument and the Ouray National Wildlife Refuge just south of Vernal, Utah. Plateau tops range in elevation from 5,000 to 7,000 feet. Local relief is from 500 to more than 3,000 feet in some of the deeper canyons that dissect these surfaces. The Green and the Colorado Rivers flow through this province.

Climate

The climate of the Rocky Mountain Forest Province within the study area consists of a semiarid steppe regime. Although there is considerable variation in altitude, precipitation falls mainly in the winter. In the highest mountains, a considerable part of the annual precipitation is snow. However, permanent snowfields and glaciers cover relatively small areas. Bases of these mountains receive only 10 to 20 inches of rainfall. As altitude increases, precipitation also increases to a maximum of 40 inches. Average annual temperatures are 35°F to 45°F; decreasing as altitude increases.

The Colorado Plateau Province is characterized by cold winters due to its generally high altitude. The daily variation in temperature is considerable. For example, summer days are hot but their nights are cool. Annual average temperatures are 40° to 55°F and decrease as altitude increases. Average annual precipitation is about 20 inches. Except on the higher mountains, parts of the province receive less than 10 inches.

Vegetation

Vegetation in the Rocky Mountain Province varies with altitude and is categorized into different zones. The uppermost zone is the alpine which is characterized by alpine tundra and the absence of trees. The subalpine is next and is dominated by subalpine fir and Englemann spruce. The montane zone is characterized by ponderosa pine and Douglas-fir. After a fire the original forest is replaced by aspen or lodgepole pine.

In the Colorado Plateau Province the area is covered by arid grasslands. Sagebrush is dominant over extensive areas. Cottonwoods, and less often other trees such as alder, grow along some of the permanent streams.

Soils

In the Rocky Mountains, soil orders occur in zones corresponding to the vegetation zones. These range from Mollisols and Alfisols in the montane zone to Aridisols in the foothill zone. In addition, because of steep slopes and recent glaciation, there are areas of Inceptisols.

In the Colorado Plateau Entisols occur along the floodplains of major streams. Aridisols occupy the plateau tops, older terraces and alluvial fans. Badlands of rough broken lands are extensive in the mountains and on plateaus.

IV. DESCRIPTION OF WETLAND HABITATS

Riverine System

Permanent rivers in the study area are classified R3UBH or R2UBH. Examples of the R3UBH classification are the Colorado and the Uinta Rivers. Two examples of the R2UBH rivers are the Green and Duchesne Rivers.

The R3UBG and R2UBG classifications will be used on rivers that can go dry in years of extreme drought.

Rivers with smaller stream channels will be classified R3UBF and R2UBF.

Riverine bars and flats will be classified R3USC, R3USA, R2USC, and R2USA.

Intermittent streams will be classified R4SBC, R4SBA, or R4SBJ.

Lacustrine System

Lakes and reservoirs larger than 20 acres in size will be classified L1UBH. Reservoirs will carry the impounded (h) modifier. Flaming Gorge Reservoir in Vernal SW is an example of a L1UBHh. Mountain lakes above tree-line with a visible bedrock shoreline will also be classified L1UBH regardless of size.

Shallow lakes at high altitudes with a visible bedrock shoreline will be classified L2UBF.

Lakes larger than 20 acres with an aquatic bed signature will be classified L2ABG.

Flats associated with reservoirs over 20 acres will be classified L2USAh and L2USCh.

Large mining pits will be classified L1UBGx.

Palustrine System

The majority of wetlands in the study area are palustrine. Emergents are classified PEMF, PEMC, PEMB, and PEMA. The dominant classifications are PEMB and PEMA. Hayed fields that have these emergents can be found primarily in the Carbon-Emry, Fairfield-Nephi, Herber Valley areas, and west of Gunnison. There are also many ponds with aquatic bed throughout the work area. They are classified PABF.

Areas of scrub-shrub are classified PSSC, PSSB, and PSSA. These scrub-shrub wetlands are more common than the wet forested PFOA.

In the higher elevations, saturated emergents and scrub-shrub areas are numerous. The saturated emergents are the dominant cover type. These emergent and scrub-shrub wetlands are often influenced by beaver ponds. These ponds are classified PABGb. The vegetation has the beaver (b) modifier as well. The emergents are classified PEMBb and the scrub-shrub areas are classified PSSBb.

Springs may also cause emergent and scrub-shrub saturation and are classified PEMB and PSSB respectively.

Field check sites were documented where problems existed, i.e., wetland areas that were not readily recognizable on the photography. Vegetation observed in these wetland habitats were grouped according to class and water regime. The following plant species were identified on check sites and represent only a fraction of all wetland plant species occurring in the project area.

Palustrine Temporary Emergents: PEMA

Distichlis spicata	salt grass
Hordeum jubatum	foxtail barley
Juncus sp.	rush
Juncus balticus	baltic rush
Phalaris arundinacea	reed canary grass
Rumex sp.	dock
Xanthium sp.	cocklebur

Palustrine Saturated Emergents: PEMB

Caltha leptoselpa	elkslip marsh marigold

Palustrine Semipermanent Emergents: PEMF

Scirpus acutus	hardstem bulrush
Typha sp.	cattail

Palustrine Temporary Scrub-shrub: PSSA

Cornus stolonifera	red-osier dogwood
Salix sp.	willow

Palustrine Seasonal Scrub-shrub: PSSC

Salix sp.	willow

Palustrine Temporary Forested: PFOA

Alnus rhombifolia	white alder

OBSERVED WETLAND VEGETATION
(grouped according to class)

A. EMERGENT

Caltha leptosepala	elkslip marsh marigold
Carex sp.	sedge
Carex nebrascensis	Nebrasa sedge
Cirsium foliosum	elk thistle
Distichlis spicata	salt grass
Dodecatheon sp.	shooting star
Eleocharis palustrine	spike rush
Equisetum sp.	horse tail
Hordeum jubatum	foxtail barley
Juncus sp.	rush
Juncus balticus	baltic rush
Phalaris arundinacea	reed canary grass
Phleum pratense	timothy
Phragmites sp.	reed
Rumex sp.	dock
Scirpus acutus	hardstem bulrush
Scirpus robustus	alkali bulrush
Triglochin sp.	arrowgrass
Typha sp.	cattail
Veratrum tenuipetalum	corn lilly
Xanthium sp.	cocklebur

B. AQUATIC BED

Lemna sp.	duckweed

C. SCRUB-SHRUB

Cornus stolonifera	red-osier dogwood
Elaeagnus angustifolia	Russian olive
Populus sp.	cottonwood
Salix sp.	willow
Tamarix ramosissima	saltcedar

D. FORESTED

Acer negundo	box elder
Alnus rhombifolia	white alder
Populus angustifolia	narrowleaf cottonwood

Table I. NWI WETLAND CLASSIFICATION CODES, COWARDIN DESCRIPTION AND COMMON TERMINOLOGY

NWI CODE WATER REGIME	COWARDIN DESCRIPTION	COMMON DESCRIPTION	VEGETATION
R2UB (F,G,H)	Riverine, lower perennial, unconsolidated bottom	Meandering rivers, low gradient	None
R2US (A,C)	Riverine, lower perennial, unconsolidated shore	Mud, or sand bars	None
R3UB (F,G,H)	Riverine, upper perennial, unconsolidated bottom	Mountain streams, major drainage areas	None
R3US (A,C)	Riverine, upper perennial, unconsolidated shore	Sand or gravel bars	None
R4SB (A,C,J)	Riverine, intermittent, streambed	Small streams, creeks or irrigation ditches	None
L1UB (H)	Lacustrine, limnetic, unconsolidated bottom	Open water - large lakes, reservoirs	None
L2UB (F)	Lacustrine, littoral unconsolidated bottom	Open water - shallow lakes at high altitudes	None
L2AB (G)	Lacustrine, littoral, aquatic bed	Shallow lakes	Aquatic bed *Lemna* sp. (duckweed)
L2US (A,C)	Lacustrine, littoral, unconsolidated shore	Flats	None

Table I. NWI WETLAND CLASSIFICATION CODES, COWARDIN DESCRIPTION AND COMMON TERMINOLOGY

NWI CODE WATER REGIME	COWARDIN DESCRIPTION	COMMON DESCRIPTION	VEGETATION
PUB (F)	Palustrine, unconsolidated bottom	Open water	None
PAB (F,G,K)	Palustrine, aquatic bed	Deep basins, impoundments, beaver ponds, sewage treatment	Lemna sp. (duckweed)
PEM (A,B,C,F)	Palustrine, emergent	Basins, depressions, marshes, floodplains, meadows, springs, seeps, oxbows or drainage areas	Caltha leptosepala (elkslip marsh marigold) Carex sp. (sedge) Carex nebrascensis (Nebrasa sedge) Cirsium foliosum (elk thistle) Distichlis spicata (salt grass) Dodecatheon sp. (shooting star) Eleocharis palustrine (spike rush) Equisetum sp. (horse tail) Hordeum jubatum (foxtail barley) Juncus sp. (rush) Juncus balticus (baltic rush) Phalaris arundinacea (reed canary grass) Phleum pratense (timothy) Phragmites sp. (reed) Rumex sp. (dock)

Table I. NWI WETLAND CLASSIFICATION CODES, COWARDIN DESCRIPTION AND COMMON TERMINOLOGY

NWI CODE WATER REGIME	COWARDIN DESCRIPTION	COMMON DESCRIPTION	VEGETATION
PEM (A,B,C,F) cont'd			Scirpus acutus (hardstem bulrush) Scirpus robustus (alkali bulrush) Triglochin sp.(arrowgrass) Typha sp. (cattail) Veratrum tenuipetalum (corn lilly) Xanthium sp. (cocklebur)
PSS (A,B,C)	Palustrine, scrub-shrub	Willow thickets, river banks, oxbows or drainage areas	Cornus stolonifera (red-osier dogwood) Elaengnus angustifolia (Russian olive) Populus sp. (cottonwood) Salix sp. (willow) Tamarix ramosissima (saltcedar)
PFO (A,B)	Palustrine, forested	River banks, floodplains drainage areas or associated with seeps on a slope	Acer negundo (box elder) Alnus rhombifolia (white alder) Populus angustifolia (narrowleaf cottonwood)
PUS (A,C)	Palustrine, unconsolidated shore	Dugouts, impoundments, flats	None

V. WATER REGIME DESCRIPTION

(A) Temporarily Flooded - Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristic of this water regime.

(B) Saturated - The substrate is saturated to the surface for extended periods during the growing season, but surface water is seldom present.

(C) Seasonally Flooded - Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is extremely variable, extending from saturated to a water table well below ground surface.

(F) Semipermanently Flooded - Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.

(G) Intermittently Exposed - Surface water is present throughout the year except in years of extreme drought.

(H) Permanently Flooded - Water covers the land surface throughout the year in all years.

(J) Intermittently Flooded - Substrate is usually exposed, but surface water is present for variable periods without detectable seasonal periodicity.

(K) Artificially Flooded - The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams.

VI. IMAGERY

Overall the emulsion of the NHAP 1:58,000 color infrared photography is of high quality. Problems exist with the October 2, 1982 photos. The emulsion is bleached, as a result the signatures are difficult to delineate. Other photography presents a dark emulsion which makes the determination of temporary wetland/upland breaks difficult. This was especially problematic in the more complicated hayed and irrigated fields. Soil surveys and side overlap will be used whenever possible to assist with delineation.

PHOTOGRAPHIC CONVENTIONS

RIVERINE

The R3UBH or R2UBH classifications are used for permanent rivers in the work area. The photo signature is open water and the water resource data will be used to help determine the water regime. Perennial rivers with a high gradient and water velocity will be classified R3UBH. An example of a R3UBH river is the Uinta River.

Rivers with an open water signature and little slope will be classified R2UBH. They are located at lower elevations and often meander. Some of these rivers are diverted for agricultural purposes. The Duchesne River is an example of the R2UBH classification.

The R3UBG or R2UBG classifications will be used for rivers with an open water signature or an intermittently exposed streambed in extreme years of drought. The water resource guide will help determine the water regime. In higher elevations the channel may be covered by tree canopy.

Another classification of rivers which can be covered by tree canopy is R3UBF or R2UBF. These rivers have a smaller stream channel than the permanent rivers. Their signatures vary from open water to a dry streambed. The water resource guide will be used to help determine water regime. The R2UBF rivers often meander and have floodplains and sand bars.

Cobble and gravel flats along the R3UBH, R3UBG, and R3UBF rivers will be classified R3USC and R3USA. The signatures will range from bluish-grey to white.

Sand and mud flats along the R2UBH, R2UBG, and R2UBF rivers will be classified R2USC and R2USA. Their signatures will vary from bluish-grey to white.

Intermittent streams with little or no water visible will be classified R4SBC, R4SBA, or R4SBJ. The streambed may be blue, blue-grey, or white.

Lacustrine System

Reservoirs over twenty (20) acres will be L1UBHh and have an open water signature. Flats associated with these reservoirs will be classified L2USCh and L2USAh. Signatures will vary from a bluish gray to white.

Mountain lakes, regardless of size, with any part of the shoreline as bed rock will be classified L1UBH.

Shallow mountain lakes, regardless of size, with any part of the shoreline as bedrock will be classified L2UBF.

Lakes over twenty acres with an aquatic bed signature will be classified L2ABG.

Large mining pits with an open water signature will be classified L1UBGx.

Palustrine System

Temporarily flooded emergents (PEMA) constitute the majority of the wetlands observed in the Northeast Utah study area. Temporary wetlands, as well as seasonal and semipermanent wetlands, occur mostly in the lower elevated pastures and hayed fields. Signature tones are usually very dark due to poor emulsion. Signatures vary from dark bluish-black to dark red and purple.

Seasonally flooded emergents (PEMC) are also found primarily in the lower elevations. Most of the seasonal wetlands were confined to oxbows, pockets, swales and floodplains of rivers. Signatures vary from deep red to dark purple with a darker red cast. Texture and mottling are important in this classification and are absent in the temporary signature.

Semipermanently flooded emergents (PEMF) constitute less acreage than the temporary and seasonal wetlands. They are often found in oxbows near rivers, in depression pockets, or throughout shallow lakes. Signatures vary from dark reddish-black to a mixture of blue, green, brown, and pink. The rough texture on the photo is a good indicator of PEMF. The PEMF vegetation, such as cattail and hardstem bulrush, cause this texture.

Saturated emergents (PEMB) are often located on slopes and are associated with springs, seeps, and beaver ponds. In the higher montane regions, the emergent wetlands are saturated. Sometimes the PEMB signature was difficult to distinguish from other emergent water regimes because their signatures vary. The position of the wetlands as well as any collateral information available was considered in these situations. The signatures are usually mottled with a variety of tones such as deep purple or a pinkish-red tone.

The aquatic bed, semipermantly flooded classification (PABF) is used for ponds having an open water or aquatic bed signature. These aquatics are usually a pink or white tone. PABF can also be in pockets, swales, basins or oxbows. Impoundments with the PABF signature will have the impounded (h) modifier and beaver ponds PABGb will have the beaver (b) modifier.

Scrub-shrub temporarily flooded (PSSA) and seasonally flooded (PSSC) were found in swales and pockets, as well as adjacent to stream channels and rivers. The signature will be a fluffy, clumpy texture with pink, red, or purple tone depending on photo emulsion. The distinction between PSSC and PSSA is a lack of emergent understory within the PSSA. The PSSC shrubs are also more compact.

In situations where salt cedar encroaches on willow, salt cedar will be used as an upland/wetland break indicator. In this study area, salt cedar will be considered an upland species of scrub-shrub. This upland signature will lose the pinkish tint and become darker with an upland understory.

Saturated scrub-shrub (PSSB) is associated with springs, seeps, and beaver complexes. The shrubs that are influenced by beaver PSSB will have the beaver (b) modifier. The PSSB signature is similar to the PSSC wetlands although PSSB scrub-shrubs might be shorter in the higher elevations.

Forested temporarily flooded (PFOA) wetlands were mainly found along streams, rivers, and in channels. Most of the forested sites field checked were upland. The emergent understory within the wet forest was a determining factor in the upland/wetland break.

General Conventions

1) Sewage treatment ponds will be labeled PABKx.

2) Fish hatcheries will be labeled PUBKx.

3) Dugouts, including golf course ponds, will be classified as PUBFx. Dugouts with an aquatic bed signature will be labeled PABFx.

4) Canals void of vegetation will be labeled R4SBCx. Canals observed supporting emergent vegetation will be labeled PEMCx. Canals supporting scrub-shrub vegetation will be classified PSSAx.

VII. MAP PREPARATION

Wetland delineation and classification is in accordance with Cowardin et al (1979). Further wetland mapping guidance is provided by NWI photographic and cartographic conventions in concert with National consistency. Delineations are produced through stereoscopic interpretation of 1:58,000 scale color infrared photography.

Field checksites of areas found within Price NE, Price NW, Price SW, Salt Lake City NE, Salt Lake City SE, Vernal NW and Vernal SW, were made prior to the actual delineation of wetlands. Field check sites were selected to clarify varying signatures found on the photography. These photographic signatures were then identified in the field using vegetation and soil types, as well as additional input from field personnel.

Collateral data included USGS topographic maps, SCS soil surveys, USGS water resources data, vegetation, climate, and ecoregional information.

The user of the map is cautioned that, due to the limitation of mapping primarily through aerial photointerpretation, a small percentage of wetlands may be unidentified. Since the photography was taken during a particular time and season, there may be discrepancies between the maps and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photointerpretation and drafting were completed by Geonex, Inc., St. Petersburg, Florida with quality control conducted by the United States Fish and Wildlife Service.

VIII. SPECIAL MAPPING PROBLEMS

Much of Utah is inaccessible by road causing portions of the NE Utah study area to not be field checked. These areas however, (Grand Junction NW, Grand Junction SW, and Price SE), lack wetland diversity and acreage making further reconnaissance less vital. Wetlands in these areas consist mostly of dry washes.

OURAY WILDLIFE REFUGE

This refuge is located in the southern section of Vernal SW. The area had heavier semipermanent emergent (PEMF) wetlands during ground truthing than our photography displayed. The dominant cover type on the photography is open water. In the field, the PEMF wetlands were controlled by pumps and dikes. All wetlands within this controlled area will carry the artificially flooded (K) water regime and the impounded (h) modifier. An example of this classification's use is PEMFKh.

Area West of Gunnison

This area is extremely wet and the light photo emulsion sometimes made breaks difficult. Therefore, soil surveys and photo overlaps will be used in these areas to help with temporarily and seasonally flooded wetland breaks as well as upland/wetland breaks.

Summary of Hayed and Irrigated Fields

Because the majority of our photography has very dark emulsion, situation will play an extremely important role in delineation. It is estimated that 85 to 90% of our wetland fields ground truthed were temporarily flooded. Our PEMA signatures were typically dark bluish-black, purple, and red. In some temporary and seasonal wetlands it was more difficult to distinguish the PEMA/PEMC breaks. The key in differentiating between the two classifications is texture and mottling. The temporary signature is generally a smoother texture whereas the seasonal signature exhibits more uneven textures and extensive mottling.

IX. MAP ACQUISITION

To discuss any questions concerning these maps, please contact:

Regional Wetland Coordinator
U.S. Fish and Wildlife Service - Region 6
Denver Federal Center
P. O. Box 25486
Denver, CO 80225

To order maps call 1-800-USA-MAPS.

Maps are identified by the name of the corresponding USGS 1:24,000 scale topographic quadrangle name. Topographic map indices are available from the USGS.

ne-uth.rpt
JP/tea.nwi

X. LITERATURE CITED

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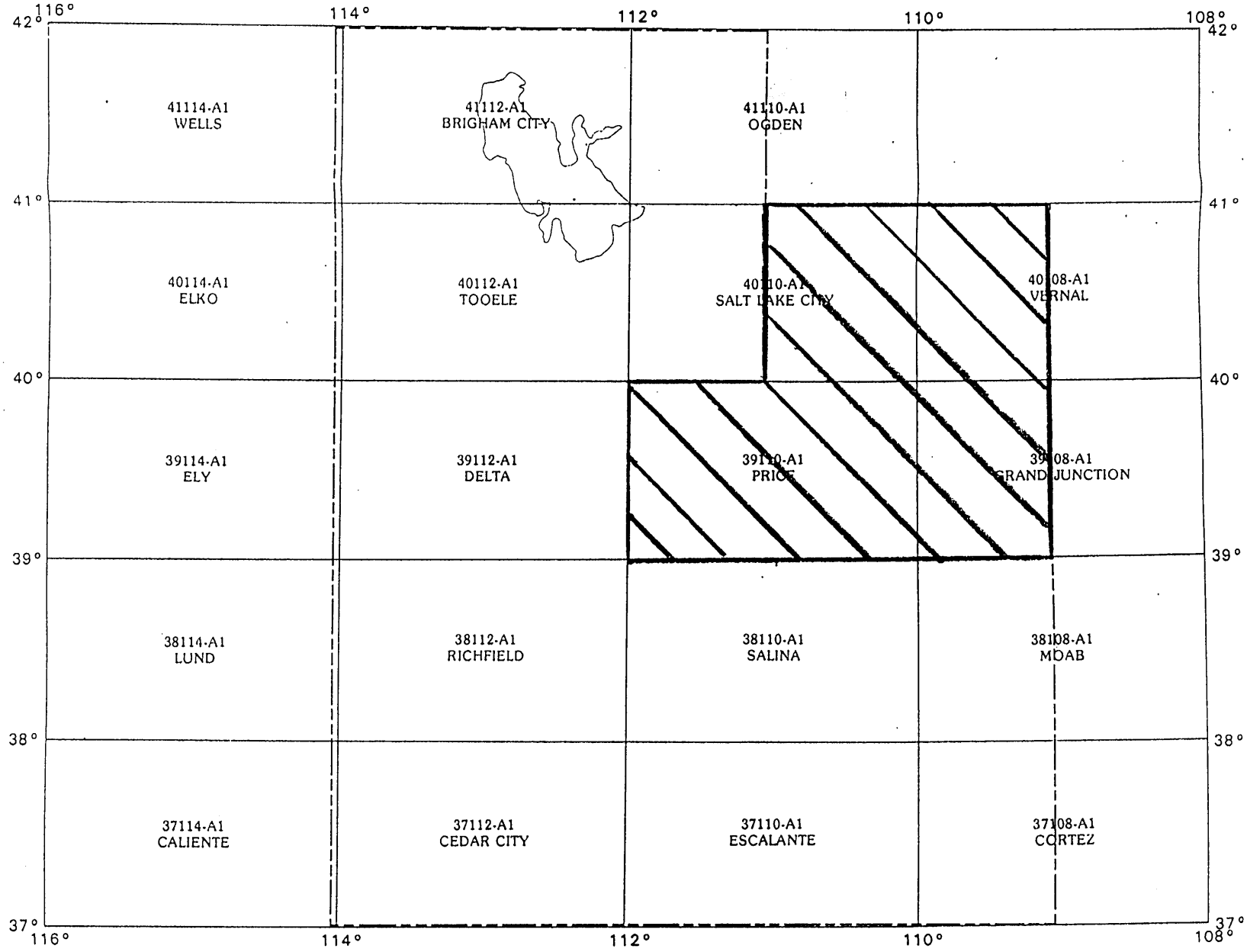
APPENDIX A
LOCATOR MAP

NORTHEAST UTAH PROJECT AREA