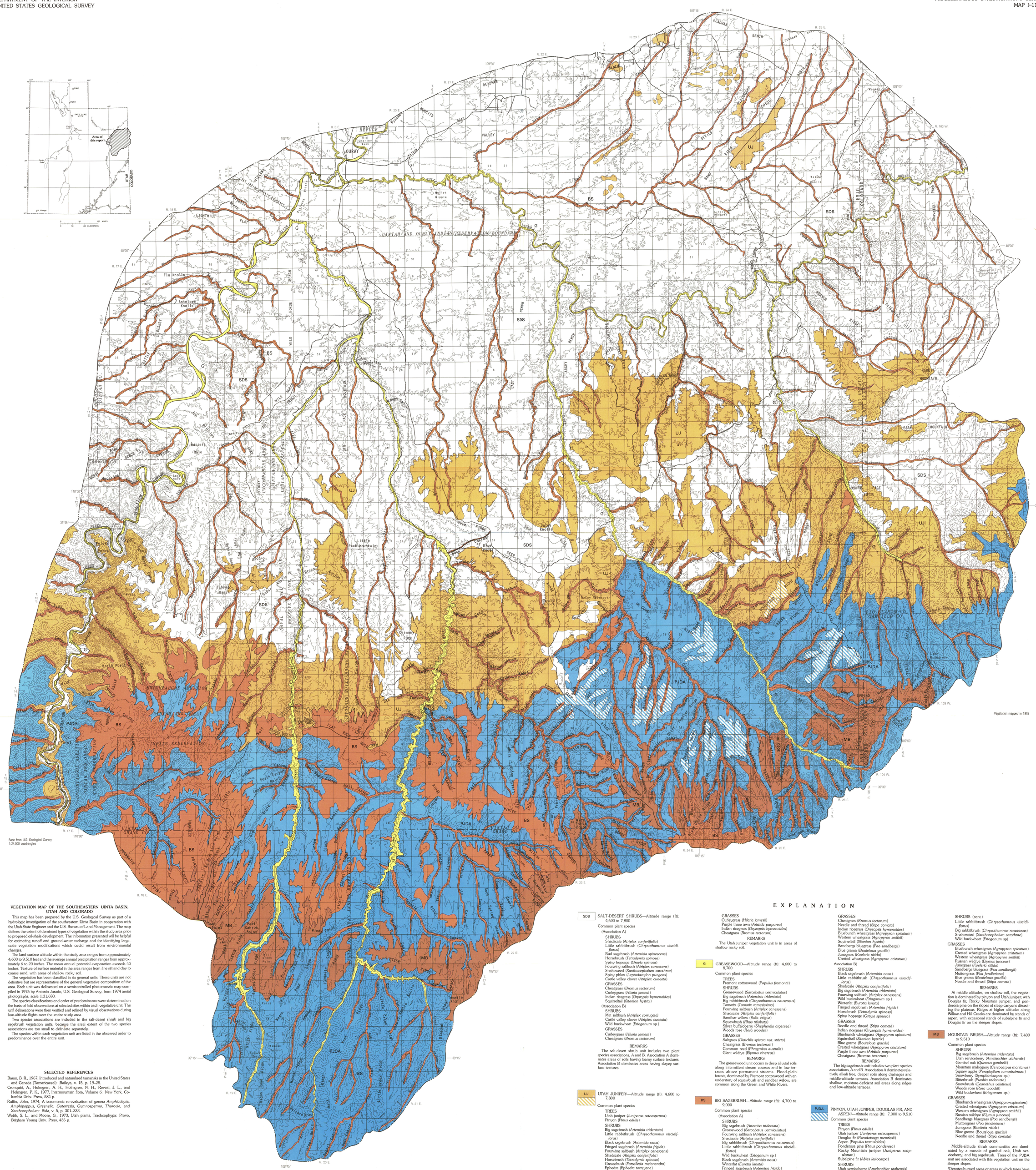

VEGETATION MAP OF THE SOUTHEASTERN UINTA BASIN, UTAH AND COLORADO

This map has been prepared by the U.S. Geological Survey as part of a hydrologic investigation of the southeastern Uinta Basin in cooperation with the Utah State Engineer and the U.S. Bureau of Land Management. The map defines the extent of dominant types of vegetation within the study area prior to proposed oil-shale development. The information presented will be helpful for estimating runoff and ground-water recharge and for identifying large-scale vegetation modifications which could result from environmental changes.

The land-surface altitude within the study area ranges from approximately 4,600 to 9,510 feet and the average annual precipitation ranges from approximately 6 to 20 inches. The mean annual potential evaporation exceeds 40 inches. Texture of surface material in the area ranges from fine silt and clay to coarse sand, with areas of shallow rocky soil.

The vegetation has been classified in six general units. These units are not definitive but are representative of the general vegetative composition of the area. Each unit was delineated on a semicontrolled photomosaic map compiled in 1975 by Antonio Jurado, U.S. Geological Survey, from 1974 aerial photographs, scale 1:31,680.

The species classifications and order of predominance were determined on the basis of field observations at selected sites within each vegetative unit. The unit delineations were then verified and refined by visual observations during low-altitude flights over the entire study area.

Two species associations are included in the salt-desert shrub and big sagebrush vegetation units, because the areal extent of the two species associations are too small to delineate separately.

The species within each vegetation unit are listed in the observed order to predominance over the entire unit.

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EXPLANATION

SDS — SALT-DESERT SHRUBS—Altitude range (ft): 4,600 to 7,800

Common plant species

(Association A)

SHRUBS
- Shadscale (*Atriplex confertifolia*)
- Little rabbitbrush (*Chrysothamnus viscidiflorus*)
- Bud sagebrush (*Artemisia spinescens*)
- Horsebrush (*Tetradymia spinosa*)
- Spiny hopsage (*Grayia spinosa*)
- Fourwing saltbush (*Atriplex canescens*)
- Snakeweed (*Xanthocephalum sarothrae*)
- Spiny phlox (*Leptodactylon pungens*)
- Castle valley clover (*Atriplex cuneata*)

GRASSES
- Cheatgrass (*Bromus tectorum*)
- Curleygrass (*Hilaria jamesii*)
- Indian ricegrass (*Oryzopsis hymenoides*)
- Squirreltail (*Sitanion hystrix*)

(Association B)

SHRUBS
- Mat saltbush (*Atriplex corrugata*)
- Castle valley clover (*Atriplex cuneata*)
- Wild buckwheat (*Eriogonum* sp.)

GRASSES
- Curleygrass (*Hilaria jamesii*)
- Cheatgrass (*Bromus tectorum*)

REMARKS

The salt-desert shrub unit includes two plant species associations, A and B. Association A dominates areas of soils having loamy surface textures. Association B dominates areas having clayey surface textures.

UJ — UTAH JUNIPER[1]—Altitude range (ft): 4,600 to 7,800

Common plant species

TREES
- Utah juniper (*Juniperus osteosperma*)
- Pinyon (*Pinus edulis*)

SHRUBS
- Big sagebrush (*Artemisia tridentata*)
- Little rabbitbrush (*Chrysothamnus viscidiflorus*)
- Black sagebrush (*Artemisia nova*)
- Fringed sagebrush (*Artemisia frigida*)
- Fourwing saltbush (*Atriplex canescens*)
- Shadscale (*Atriplex confertifolia*)
- Horsebrush (*Tetradymia spinosa*)
- Greasebush (*Forsellesia meionandra*)
- Ephedra (*Ephedra torreyana*)
- Mountain mahogany (*Cercocarpus montanus*)
- Yucca (*Yucca harrimaniae*)
- Wild buckwheat (*Eriogonum* sp.)
- Prickly-pear cactus (*Opuntia polyacantha*)

GRASSES
- Curleygrass (*Hilaria jamesii*)
- Purple three awn (*Aristida purpurea*)
- Indian ricegrass (*Oryzopsis hymenoides*)
- Cheatgrass (*Bromus tectorum*)

REMARKS

The Utah juniper vegetation unit is in areas of shallow rocky soil.

G — GREASEWOOD—Altitude range (ft): 4,600 to 8,700

Common plant species

TREES
- Fremont cottonwood (*Populus fremontii*)

SHRUBS
- Greasewood (*Sarcobatus vermiculatus*)
- Big sagebrush (*Artemisia tridentata*)
- Big rabbitbrush (*Chrysothamnus nauseosus*)
- Tamarix (*Tamarix ramosissima*)
- Fourwing saltbush (*Atriplex canescens*)
- Shadscale (*Atriplex confertifolia*)
- Sandbar willow (*Salix exigua*)
- Squawbush (*Rhus trilobata*)
- Silver buffaloberry (*Shepherdia argentea*)
- Woods rose (*Rosa woodsii*)

GRASSES
- Saltgrass (*Distichlis spicata* var. *stricta*)
- Cheatgrass (*Bromus tectorum*)
- Common reed (*Phragmites australis*)
- Giant wildrye (*Elymus cinereus*)

REMARKS

The greasewood unit occurs in deep alluvial soils along intermittent stream courses and in low terraces above permanent streams. Flood-plain forests, dominated by Fremont cottonwood with an understory of squawbush and sandbar willow, are common along the Green and White Rivers.

BS — BIG SAGEBRUSH—Altitude range (ft): 4,700 to 9,000

Common plant species

(Association A)

SHRUBS
- Big sagebrush (*Artemisa tridentata*)
- Greasewood (*Sarcobatus vermiculatus*)
- Fourwing saltbush (*Atriplex canescens*)
- Shadscale (*Atriplex confertifolia*)
- Big rabbitbrush (*Chrysothamnus nauseosus*)
- Little rabbitbrush (*Chrysothamnus viscidiflorus*)
- Wild buckwheat (*Eriogonum* sp.)
- Black sagebrush (*Artemisia nova*)
- Winterfat (*Eurotia lanata*)
- Fringed sagebrush (*Artemisia frigida*)
- Horsebrush (*Tetradymia spinosa*)
- Spiny hopsage (*Grayia spinosa*)
- Snowberry (*Symphoricarpos* sp.)
- Bitterbrush (*Purshia tridentata*)

GRASSES
- Cheatgrass (*Bromus tectorum*)
- Needle and thread (*Stipa comata*)
- Indian ricegrass (*Oryzopsis hymenoides*)
- Bluebunch wheatgrass (*Agropyron spicatum*)
- Western wheatgrass (*Agropyron smithii*)
- Squirreltail (*Sitanion hystrix*)
- Sandbergs bluegrass (*Poa sandbergii*)
- Blue grama (*Bouteloua gracilis*)
- Junegrass (*Koeleria nitida*)
- Crested wheatgrass (*Agropyron cristatum*)

Association B)

SHRUBS
- Black sagebrush (*Artemisia nova*)
- Little rabbitbrush (*Chrysothamnus viscidiflorus*)
- Shadscale (*Atriplex confertifolia*)
- Big sagebrush (*Artemisia tridentata*)
- Fourwing saltbush (*Atriplex canescens*)
- Wild buckwheat (*Eriogonum* sp.)
- Winterfat (*Eurotia lanata*)
- Fringed sagebrush (*Artemisia frigida*)
- Horsebrush (*Tetradymia spinosa*)
- Spiny hopsage (*Grayia spinosa*)

GRASSES
- Needle and thread (*Stipa comata*)
- Indian ricegrass (*Oryzopsis hymenoides*)
- Bluebunch wheatgrass (*Agropyron spicatum*)
- Squirreltail (*Sitanion hystrix*)
- Blue grama (*Bouteloua gracilis*)
- Crested wheatgrass (*Agropyron cristatum*)
- Purple three awn (*Aristida purpurea*)
- Cheatgrass (*Bromus tectorum*)

REMARKS

The big sagebrush unit includes two plant species associations, A and B. Association A dominates relatively alkali free, deeper soils along drainages and middle-altitude terraces. Association B dominates shallow, moisture-deficient soil areas along ridges and low-altitude terraces.

PJDA — PINYON, UTAH JUNIPER, DOUGLAS FIR, AND ASPEN[1]—Altitude range (ft): 7,000 to 9,510

Common plant species

TREES
- Pinyon (*Pinus edulis*)
- Utah juniper (*Juniperus osteosperma*)
- Douglas fir (*Pseudotsuga menziesii*)
- Aspen (*Populus tremuloides*)
- Ponderosa pine (*Pinus ponderosa*)
- Rocky Mountain juniper (*Juniperus scopulorum*)
- Subalpine fir (*Abies lasiocarpa*)

SHRUBS
- Utah serviceberry (*Amelanchier utahensis*)
- Mountain mahogany (*Cercocarpus montanus*)
- Snowberry (*Symphoricarpos* sp.)
- Big sagebrush (*Artemisia tridentata*)
- Black sagebrush (*Artemisia nova*)

SHRUBS (cont.)
- Little rabbitbrush (*Chrysothamnus viscidiflorus*)
- Big rabbitbrush (*Chrysothamnus nauseosus*)
- Snakeweed (*Xanthocephalum sarothrae*)
- Wild buckwheat (*Eriogonum* sp)

GRASSES
- Bluebunch wheatgrass (*Agropyron spicatum*)
- Crested wheatgrass (*Agropyron cristatum*)
- Western wheatgrass (*Agropyron smithii*)
- Russian wildrye (*Elymus junceus*)
- Junegrass (*Koeleria nitida*)
- Sandbergs bluegrass (*Poa sandbergii*)
- Muttongrass (*Poa fendleriana*)
- Blue grama (*Bouteloua gracilis*)
- Needle and thread (*Stipa comata*)

REMARKS

At middle altitudes, on shallow soil, the vegetation is dominated by pinyon and Utah juniper, with Douglas fir, Rocky Mountain juniper, and ponderosa pine on the slopes of steep canyons dissecting the plateaus. Ridges at higher altitudes along Willow and Hill Creeks are dominated by stands of aspen, with occasional stands of subalpine fir and Douglas fir on the steeper slopes.

MB — MOUNTAIN BRUSH—Altitude range (ft): 7,400 to 9,510

Common plant species

SHRUBS
- Big sagebrush (*Artemisia tridentata*)
- Utah serviceberry (*Amelanchier utahensis*)
- Gambel oak (*Quercus gambelii*)
- Mountain mahogany (*Cercocarpus montanus*)
- Squaw apple (*Peraphyllum ramosissimum*)
- Snowberry (*Symphoricarpos* sp.)
- Bitterbrush (*Purshia tridentata*)
- Snowbrush (*Ceanothus velutinus*)
- Woods rose (*Rosa woodsii*)
- Wild buckwheat (*Eriogonum* sp.)

GRASSES
- Bluebunch wheatgrass (*Agropyron spicatum*)
- Crested wheatgrass (*Agropyron cristatum*)
- Western wheatgrass (*Agropyron smithii*)
- Russian wildrye (*Elymus junceus*)
- Sandbergs bluegrass (*Poa sandbergii*)
- Muttongrass (*Poa fendleriana*)
- Junegrass (*Koeleria nitida*)
- Blue grama (*Bouteloua gracilis*)
- Needle and thread (*Stipa comata*)

REMARKS

Middle-altitude shrub communities are dominated by a mosaic of gambel oak, Utah serviceberry, and big sagebrush. Trees of the PJDA unit are associated with this vegetation unit on the steeper slopes.

[1]Denotes burned areas or areas in which trees have been uprooted by chains. Chaining or burning has not altered the order of vegetation predominance; however, the areas have been seeded with crested wheatgrass and Russian wildrye.

SCALE 1:126 720

5 4 3 2 1 0 5 MILES

5 4 3 2 1 0 5 10 KILOMETERS

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100-FOOT INTERVALS
DATUM IS MEAN SEA LEVEL

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.—1979—W78472

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1979

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