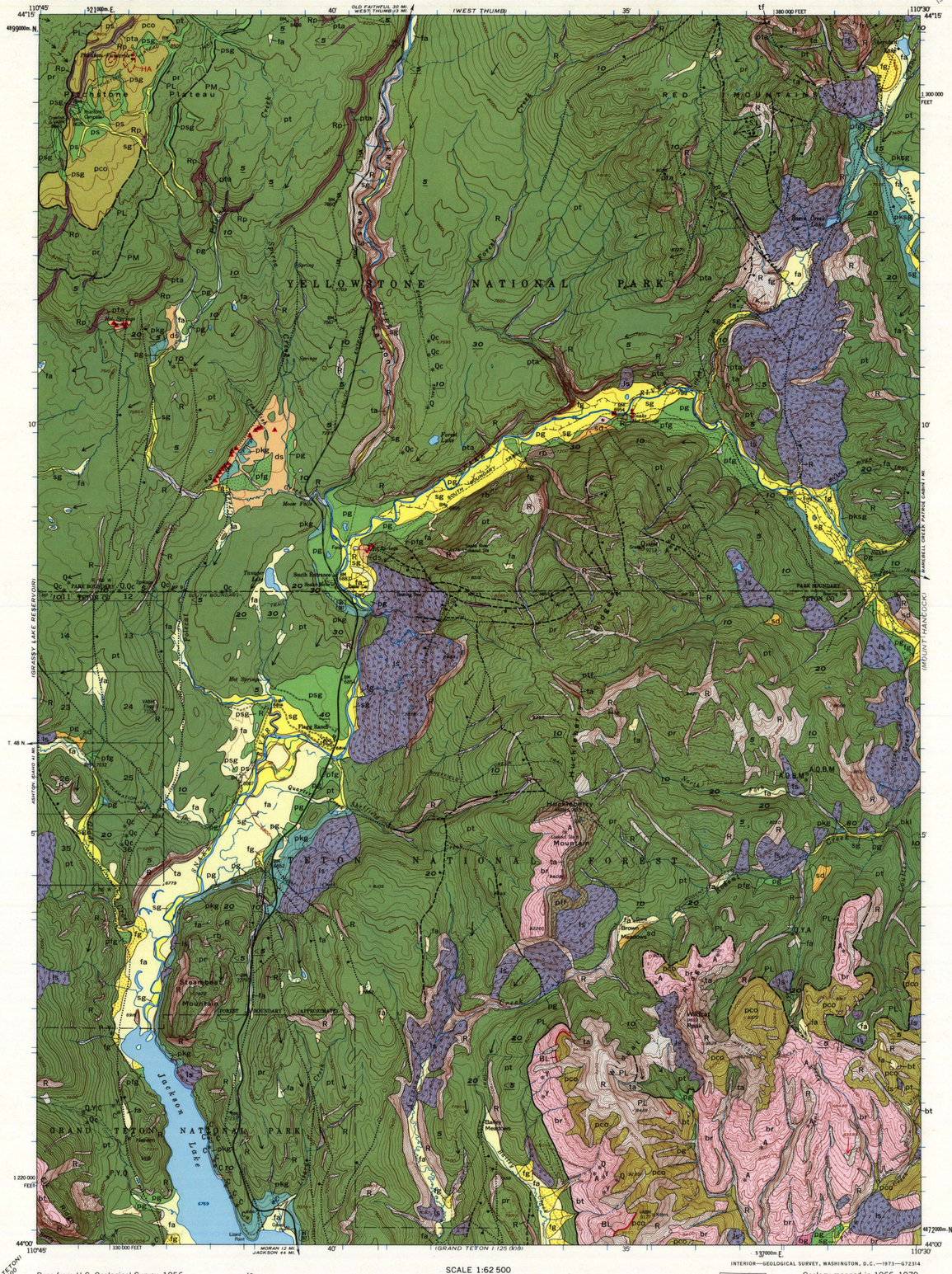
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS GEOLOGIC INVESTIGATIONS
MAP I-639



Base from U.S. Geological Survey, 1956
10,000-foot grid based on Wyoming coordinate system, west zone
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue

SCALE 1:62 500

1 ½ 0 1 2 3 4 MILES
1 .5 0 1 2 3 4 KILOMETERS

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

APPROXIMATE MEAN DECLINATION, 1973

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1973—G72314

WYOMING
QUADRANGLE LOCATION

Geology mapped in 1966, 1970, and 1971. Assisted in 1966 by K. L. Pierce, R. G. Baker, and W. M. Thomas

DESCRIPTION OF UNITS

NEOGLACIATION

ALLUVIAL DEPOSITS

fa Fine-grained humic alluvium—Dark-gray to gray-brown silt, sand, and clay; underlies older parts of flood plains and glacial depressions; commonly marshy; mostly 5–10 feet thick; overlies stream gravel (sg) along flood plains and till (pt) in glacial depressions.

sg Stream gravel—Gravel, cobbles, and boulders in coarse sand matrix. Underlies bed of Snake River, its adjacent low terraces, and flood plains of other streams. Clasts are mainly 1–6 inches across but locally exceed 1 foot. Deposits are buff to gray, well sorted, poorly bedded, and include some beds of sand and silty sand.

fg Fan gravel—Alluvial fans which consist predominantly of subrounded to subangular gravel but which contain sandy and silty beds, especially toward their lower margin. Gravel is buff to gray, moderately to poorly sorted; channel-and-fill crossbedding.

ds Diatomaceous sediment—Light-gray to white, fine-grained sediment deposited in cool marshy areas downslope from thermal springs. Composed predominantly of tests of diatoms which live in the cool but highly siliceous thermal waters. Particularly widespread in drainages of Polecat, Crawfish, and Spirea Creeks.

COLLUVIAL DEPOSITS

ta Talus deposit—Angular to subangular rock fragments that form cone or sheet of rubble at base of cliff. Interstices void near surface, filled with silty sand at depth. Sparsely vegetated and unstable. Deposits on Wildcat Ridge are silty and contain small angular clasts.

tf Talus flow deposit—Lobate mass of rock fragments that extends out from toe of a talus as a result of flowage. Single deposit in cirque in northeast part of quadrangle.

fr Frost rubble—Thin mantle of angular slabby rubble of rhyolite on upland in northeast part of quadrangle.

rb Block rubble—Angular to slabby blocks that form a sloping sheet of rubble on tuff of the Yellowstone Group along south side of Snake River above confluence with Lewis River. Deposits 3–10 feet thick; interstices void in upper part.

sd Solifluction deposit—Buff coarse to fine stony sandy silt, unsorted and unsized; forms lobes and lobate depositional terraces that encroach over terraced stream gravel (sg) deposits at foot of north-facing slopes along Snake River. Some deposits seasonally active, others may be as old as middle Pinedale. Most deposits derived from Pinedale Till (pt), and many deposits mapped as Pinedale Till have moved downslope by subsequent solifluction.

ls Landslide deposit—Large mass of debris including both till (pt) and bedrock that has slumped and flowed downslope from an arcuate headwall scarp. Material is clayey to silty with numerous large and small clasts. Matrix derived mainly from Cretaceous shale. Deposits characterized by steep hummocky topography, flow ridges, and undrained depression.

PINEDALE GLACIATION

GLACIAL DEPOSITS

pt Till—Gray-brown to gray, stony clayey sandy silt; loose to compact; stones angular to subround. Deposits 5–30 feet thick; grade into thin glacial rubble (pr) on some uplands. Surface smooth to hummocky; undrained depressions common in lowland areas; ice-molded topography common on uplands. In eastern part of quadrangle deposits are clayey and contain abundant shale and sandstone clasts; in southeastern part, they contain abundant quartzite cobbles. In western and northern parts, deposits are sandy and clasts are mostly of rhyolite. A recessional lateral moraine lies along the east side of Jackson Lake. Erratics of crystalline rocks, derived from the Teton Range, occur in this moraine as far north as 1½ miles south of the National Forest boundary.

pr Glacial rubble—Thin (0–5 ft) veneer of sand, gravel, cobbles, and boulders that locally contains striated stones and erratics on uplands of Huckleberry Ridge and Red Mountains. Includes small exposures of bedrock. On Pitchstone Plateau, consists of patches of till including local small end moraines and sparse veneer of gravel, cobbles, and boulders of locally derived obsidian and rhyolite in pumiceous matrix. Some stones are glacially shaped or striated. Deposits rest on glacially striated upland characterized by closely spaced pressure ridges and elongate interridge depressions of underlying rhyolite flow. Ridges are forested; interridge depressions are grass covered. Soil on till has weakly oxidized B-horizon about 1 foot thick.

ICE-CONTACT DEPOSITS

pkg, pksg Kame deposits—Buff to gray gravel (pkg) and sandy gravel (pksg) underlying terraces that have local ice-contact scarps. Deposits irregularly bedded and poorly to well sorted; display abrupt changes in texture. Material is well rounded; contains cobbles and boulders 6–18 inches across. Along east side of Jackson Lake the deposits merge northward into a lateral moraine.

ALLUVIAL DEPOSITS

pg, psg, ps Stream sand and gravel—Gray gravel (pg) underlying stream terraces 10–60 feet above present drainage. Irregularly bedded, well sorted, well rounded. Contains cobbles and boulders as much as 1 foot in diameter, and moderate amounts of sand, mostly medium to coarse grained. Deposits along Snake River near Flagg Ranch are notably sandy (psg). In places they form two outwash terraces, locally containing kettles. All deposits probably of middle Pinedale age. Gravel deposits (pg) in headwaters of Polecat Creek are bouldery, composed mostly of obsidian, rhyolite, and pumice, and occur in bedrock channels cut marginally to ice. Sand deposits (ps) on Pitchstone Plateau near Phantom Campsite are composed of medium-grained pumice and obsidian sand. B-horizon of soil on all deposits is about 1 foot thick.

pfg Fan gravel—Gray to tan sandy gravel underlying steeply sloping alluvial fans graded to Pinedale stream gravel deposits (pg). Material poorly sorted, irregularly bedded, poorly to well rounded. Incised by modern drainage. All probably of middle Pinedale age. B-horizon of soil on deposits is about 1 foot thick.

COLLUVIAL DEPOSITS

pta Talus deposit—Angular blocky deposits of rock fragments that form a cone or sheet at base of cliff. Interstices locally void in upper part, but commonly filled with sandy material. Forest or grass covered. Not now accumulating.

ptf Talus flow deposit—Single large deposit of coarse blocky tuff fragments of Yellowstone Group that forms lobate mass extending downslope from foot of talus along north and east sides of Huckleberry Mountain. Deposit is stable and bears a soil about 1 foot thick. Overlies shaly Cretaceous bedrock.

pco Colluvium—Rock rubble that locally mantles slopes beyond limit of the Pinedale iceeap. In southeast part of area, consists mostly of sandstone fragments, or of quartzite cobbles in a silty matrix. In high mountain basins, commonly includes small unmapped and locally active solifluction and nivation deposits. In northwest part of quadrangle, material consists of subangular to subrounded fragments of rhyolite, obsidian, and pumice in a sandy pumiceous matrix. These materials are derived by weathering, solifluction, and creep from underlying pumice and rock of Pitchstone Plateau rhyolite flow. Deposits bear weakly oxidized soil as much as 3 feet thick that locally grades down into underlying pumice.

BULL LAKE GLACIATION

GLACIAL DEPOSITS

bt Till—Gray to brown stony sandy silt; nonbedded, unsorted, compact. Stones are subangular to well rounded; locally striated; most are of locally derived sandstone and quartzite cobbles but some are erratics of tuff of Yellowstone Group. Deposits are in southern part of quadrangle where they form a continuous ground moraine east of Bailey Creek and small patches along steeply dissected slopes of tributaries of Pilgrim Creek in southeast part. They lie beyond outer limit of Pinedale Till (pt) and locally above Pinedale gravel deposits (pg) on valley floor. In places they bear partly stripped well-oxidized soil 1–2 feet thick.

br Glacial rubble—Thin mantle of rock debris in sandy to silty clay matrix. In drainage of Pilgrim Creek material composed mostly of fractured and whole quartzite cobbles and pebbles, and sparse erratic stones of Eocene andesite. East of Bailey Creek, material composed mostly of angular to subangular sandstone fragments and local erratics of Eocene andesite, quartzite and rhyolite tuff of Yellowstone Group. Deposits on Huckleberry Mountain, mostly of local rhyolite tuff of Yellowstone Group but contain a few erratics of Eocene andesite. Deposits lie above or beyond outer limit of the Pinedale iceeap and are mostly less than 5 feet thick.

LACUSTRINE DEPOSITS

bkl Ice-dammed lake silt—Gray to blue-gray laminated silt and sand that contains white pumiceous sand layers and, in its lower part, scattered pebbles and cobbles of tuff of the Yellowstone Group, quartzite cobbles from a Paleocene conglomerate, and Eocene andesite. Deposits are along Coulter Creek near east boundary of quadrangle, are about 20 feet thick, and occur 20–40 feet above the stream. They are overlain by Pinedale Till (pt) that contains fragments from the pumice beds.

ALLUVIAL DEPOSITS

bg Gravel—Gray to tan outwash gravel composed mostly of quartzite cobbles and boulders derived from a Paleocene conglomerate. Underlies terrace about 40 feet above Pilgrim Creek along south boundary of quadrangle. Material is well rounded, obscurely bedded, at least 40 feet thick.

BEDROCK

Rp Pitchstone Plateau rhyolite flow—Obsidian rhyolite dated by K/Ar method at about 70,000 years old; forms the Pitchstone Plateau. (see index map).

R Undifferentiated rock—The quadrangle is underlain by a variety of bedrock types. Paleozoic limestone, sandstone, and shale occur south of Snake River and east of the park entrance, south of Red Mountains, and west of Jackson Lake. Soft Mesozoic and Paleocene shale, sandstone, and conglomerate underlie the entire southeast part of the quadrangle, the area south of Glade Creek, and the southeast slope of the Red Mountains. Andesitic mudflows of the Absaroka Volcanic Supergroup of Eocene age occur between Snake River and Harebell Trail. Tuff of the Yellowstone Group underlies most of the Red Mountains and the region east and west of Lewis River. In these areas, it consists of two units, one 2.0 million years old, the other 0.6 million years old. The bedrock has been mapped by R. L. Christiansen, J. D. Love and W. R. Keefer. (U.S. Geological Survey, 1972). Potassium-argon (K/Ar) dates are by J. D. Obradovich (written commun., 1972).

SURFICIAL GEOLOGIC HISTORY

INTRODUCTION

The north half of the Huckleberry Mountain quadrangle lies in the southern part of Yellowstone National Park, the south half in Teton National Forest and northern Teton National Park. Most of the area is drained southwest by the deep valley of the Snake River and its tributaries to Jackson Lake. The southeast part is drained to the south by Arizona Creek, Bailey Creek, and the headwaters of Pilgrim Creek. The drainage divides the quadrangle into five upland units. Huckleberry Ridge (culminating in Huckleberry Mountain, elev. 9,615 ft.) occupies the central part; the Red Mountains lie to the northeast, the Pitchstone Plateau to the northwest, the flank of the Teton Range to the southwest, and the dissected masses of Wildcat Ridge and Wildcat Peak (elev. 9,693 ft.) to the southeast. Local relief is as much as 2,000 feet between major valley floors and upland summits.

PLEISTOCENE GLACIATIONS

Although great icecaps covered most of Yellowstone Park and adjacent areas during several different glaciations in Pleistocene time, deposits of only two of these glaciations (from oldest to youngest, the Bull Lake and Pinedale) occur in the quadrangle. During each, an icecap flowed southwest across the quadrangle into Jackson Hole from sources in the mountainous headwaters of the Yellowstone River and the basin of Yellowstone Lake.

BULL LAKE GLACIATION

During the Bull Lake Glaciation two successive icecaps, separated by a nonglacial interval, are known to have occupied the basin of Yellowstone Lake and other areas. But in the Huckleberry Mountain quadrangle their deposits cannot be seperated. Small areas of ground moraine and segments of end moraine in the southeast part of the quadrangle indicate that ice of Bull Lake age flowed through low divides in Wildcat Ridge and its extension east of Wildcat Peak, but did not cover the summit areas. The upper limit of glacially shaped landforms and sparse erratics suggest that the general surface of the ice at its maximum descended from altitudes between 8,600 and 9,400 feet in the divides to about 8,200 feet in the basin of Pilgrim Creek at the south boundary of the quadrangle. West of Wildcat Ridge, the upper limit of the deposits suggests that the maximum height of the ice was at an altitude of about 8,600 feet at the south boundary of the quadrangle, and the presence of erratics of tuff of the Yellowstone Group derived from the Red Mountains shows that the ice flowed southward into the basin of Jackson Lake. Gravel of Bull Lake age forms a small terrace along Pilgrim Creek, and Bull Lake melt waters were probably in part responsible for the deep incision of the headwaters of Pilgrim Creek and its tributaries.

Gradual downwasting and stagnation of the ice in the drainage of the Snake River is indicated by the presence of pumiceous ice-dammed lake sediments of Bull Lake age (bkl), overlain by Pinedale Till (pt), at the confluence of Coulter Creek and Rodent Creek.

Following Bull Lake Glaciation the Pitchstone Plateau rhyolite flow erupted from a source to the northwest into the northwest corner of the quadrangle (see index map). Its age, as dated by the K-Ar method, is about 70,000 years (J. D. Obradovich, written commun., 1972). Flow ridges at its surface are unusually fresh as compared to those of older flows and both its outer obsidian crust and an overlying blanket of pumice are extensively preserved, even where subsequently glaciated in Pinedale time.

PINEDALE GLACIATION

Much more is known about Pinedale Glaciation than about older glaciations. Glaciers, formed in the drainage of the upper Yellowstone River, entered the basin of Yellowstone Lake at sometime after 29,000 years ago and gradually filled and overflowed the basin divides in all directions. To the southwest, the ice flowed into the northeastern part of the Huckleberry Mountain quadrangle around the east and west flanks of the Red Mountains. Ultimately it thickened and spread over the landscape to join with local glaciers in the Red Mountains, on Huckleberry Ridge, and on the north side of Wildcat Ridge, as well as with glaciers from the Teton Range in the Jackson Lake area. At its maximum extent, the cap covered all of the quadrangle except the southeast corner. It abutted Huckleberry Mountain and the north slope of Wildcat Ridge, where it flowed through low cols to form local end moraines a short distance to the south. To the west, it extended southward beyond the south end of Jackson Lake. At that time the ice was at least 2,500 feet thick over Basin Creek and the west-trending course of the Snake River, more than 1,000 feet thick over the bottom of the canyon of Lewis River, and at least 1,500 feet thick over Jackson Lake at the south border of the quadrangle. It failed to join with the east edge of a local icecap on the Pitchstone Plateau, but melt water from that local cap cut ice-marginal channels along its western margin at an altitude of about 8,400 feet.

The general flow direction of the iceeap at its maximum stand, as indicated by ice-molded topography, (shown by arrows) was southwest across the uplands in the northeast part of the quadrangle and west-southwest over the valley of the Snake River. In the southwest part of the quadrangle, the flow lines show that the ice not only flowed south into the Jackson Lake area, but also west around the north end of the Teton Range. Abundant erratics of quartzite (Qc) occur westward from source areas in the Red Mountains past South Entrance and along the Park boundary to points far beyond the west boundary of the quadrangle. Ice-molded features are poorly developed or absent in the drainage of Rodent Creek, where the ice was confined by Huckleberry Mountain to the west and Wildcat Ridge to the south.

Following its maximum advance in early Pinedale time, the ice receded an unknown distance and then readvanced one or more times during middle Pinedale time. The extents of these middle Pinedale readvances are not well known in this quadrangle. West of Lewis Canyon, on the flank of the Pitchstone Plateau, a stand about 100 feet lower than the early Pinedale maximum is indicated by low moraines, by embankments of thick till in valley reentrants, and by ice-marginal channels in bedrock. Another stand, probably younger, is marked by an end moraine on Arizona Creek at the south border of the quadrangle and by lateral moraine segments and intervening kame terraces along the east side of Jackson Lake and the valley of the Snake River to the north. Along the east side of Jackson Lake these deposits contain erratics of granite and gneiss (C) derived from the Teton Range, as far north as 2 miles north of Lizard Point. These erratics indicate a northward extension of ice from the Teton Range at the same time as the secondary readvance of ice which is marked by the lateral moraine in the valley of the Snake River.

Final stagnation of the ice in the valley of the Snake River is indicated by kame terraces and outwash terraces underlain by gravel (pkg, pg) that contains ice block depressions near Flagg Ranch, South Entrance, and northeast of the confluence of Coulter Creek. Kame terrace gravels (pkg) along Basin Creek and Crawfish Creek also indicate that stagnant ice was present in these areas. Along Crawfish Creek, gravel deposition was localized in depressions melted in the ice by underlying hot springs.

LATE PINEDALE AND NEOGLACIAL GLACIATION

Small glaciers may have existed in cirques in the Red Mountains and on Wildcat Peak in late Pinedale time, but no deposits of such glaciers were found. No glaciers existed in the quadrangle in Neoglacial time.

Post-glacial frost riving and solifluction.—During wasting of the Pinedale icecap and in late Pinedale time, frost-riving of freshly exposed cliffs of hard rock formed deposits of talus (pta) at their base. Such deposits are widespread in cirques in the Red Mountains and below cliffs that border the valley of the Snake River, the canyon of Lewis River, and the north and east sides of Huckleberry Mountain and its extension to the south. These deposits are now stable and mostly forested. Actively accumulating talus occurs only locally in cirques in the Red Mountains, in the canyon of Lewis River, and as minor deposits (not mapped) beneath cliffs at the heads of some landslides.

Solifluction, also, was widespread during recession of the Pinedale ice and in late Pinedale time. Many deposits mapped as till (pt) have, in fact, flowed downslope after original deposition by the ice. Mapped solifluction deposits are mainly those that have flowed out over terrace gravels (pg) of Pinedale age as lobate sheets with steep fronts 5–15 feet high. Others, such as those in the high southwest-facing basins on Wildcat Ridge, are hummocky nivation deposits. On the north and east sides of Huckleberry Mountain and its extension to the south, solifluction of the shaly bedrock under saturated conditions in late glacial time has carried talus accumulations downslope from the cliff base to form an extensive but relatively thin blocky lobate sheet mapped as talus flow deposit (ptf). All these solifluction deposits are now stable and forested, but minor movements continue along the steep fronts of some deposits at the base of north-facing steep valley walls.

Post-glacial alluviation and erosion.—Post-glacial alluviation and erosion along the Snake River at and northeast of South Entrance has formed as many as four stream-gravel terraces from 5 to about 20 feet above the present stream. Farther downstream, toward Jackson Lake, there appears to have been rather continuous but gradual alluviation headward from a delta, now covered by the lake whose level has been raised by the dam at its outlet. Most other active alluvial gravel accumulations form small alluvial fans (fg) where tributary streams enter main valleys. Extensive fine-grained humic alluvium (fa) occurs as overbank flood deposits on flood plains, and as accumulations in ice-scoured depressions and kettles on the uplands. In some areas, especially in the basin of Crawfish and Spirea Creeks, diatomaceous sediments (ds) have accumulated downstream from silica-rich thermal springs.

Erosion of Lewis Canyon may have begun in Bull Lake time and continued during the Bull Lake-Pinedale interglacial interval. Following this, the canyon was buried beneath Pinedale ice and may have been partly filled with Pinedale Till. Further downcutting probably took place as Pinedale ice downwasted and melt waters flowed southward from an ice-marginal lake in the basin of Yellowstone Lake across the Continental Divide and across stagnant ice in the basin of Lewis Lake immediately north of the quadrangle. Since Pinedale deglaciation, erosion has continued to the present. The canyon of Red Creek above its confluence with Snake River probably had a similar history. However, an original southward course of Basin Creek into Red Creek was blocked by a landslide during recession of the Pinedale ice and Basin Creek was diverted eastward to its present course. The very deep gullies in the southeast part of the quadrangle were also probably cut by pre-Pinedale, as well as by Pinedale streams.

Post-glacial stream erosion has cut gullies 10–50 feet deep in the soft rocks of Huckleberry Ridge in the central part of the quadrangle, but along most other streams postglacial erosion amounts to only a few feet.

LANDSLIDES

Many large landslide deposits (ls) occur in the quadrangle, a result of oversteepening of slopes by glacial scour in Pinedale time and of widespread saturation of bentonitic shale bedrock and shale-derived till mantle during and after Pinedale deglaciation. The lower parts of the large landslides along the Snake River south of Flagg Ranch contain bedded gravel, suggesting that these and other landslides in the quadrangle may have slumped against or over stagnant ice. Others appear to be of postglacial origin, some in relatively recent time. Most of the landslides appear to have originated as coherent masses along single arcuate planes of failure. However, the masses broke up to form earth flows as movement progressed. Large blocks and multiple arcuate scarps locally indicate some headward progression or lateral extension by successive failures. Internal slump scarps, enclosed depressions, and lobate surface forms are evidence of secondary movements, and parts of nearly all of the landslides still move slowly, at least seasonally.

QUATERNARY NORMAL FAULTS

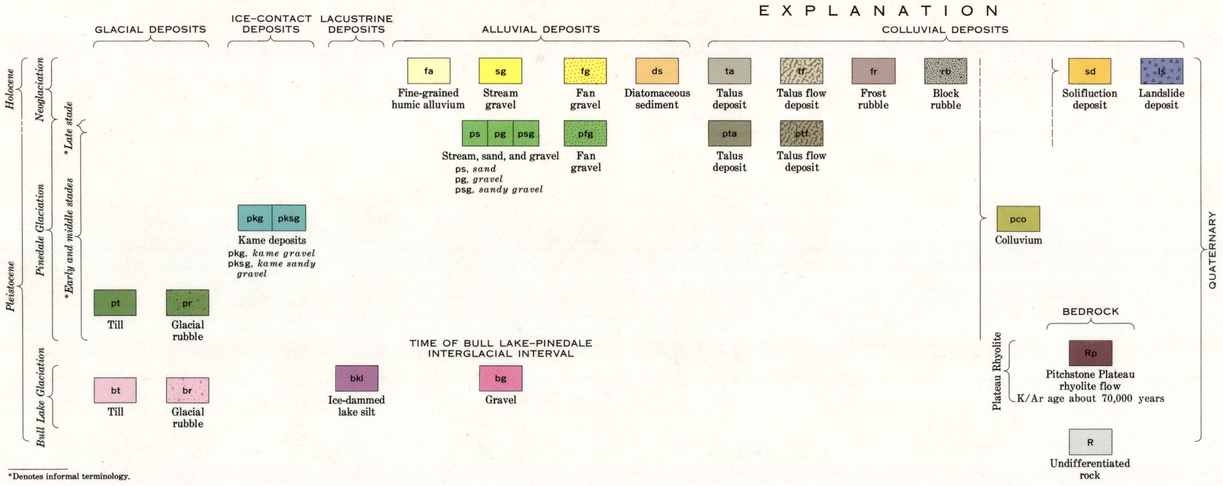
The normal faults shown were mapped in large part by R. L. Christiansen, J. D. Love, and W. R. Keefer (U. S. Geological Survey, 1972). Their distribution is incompletely shown in the southeast part of the quadrangle. Quaternary movements along a belt of faults that extend southwest from the northeast part of the quadrangle and south of the valley of the Snake River were associated with collapse of the wall of a caldera following eruption of the 0.6 m.y.-old tuff of the Yellowstone Group. Displacements are mostly only a few tens of feet. Movement along faults that trend northward through the west half of the quadrangle was probably associated with Quaternary uplift of the Teton Range and coincident subsidence of Jackson Hole to the south. The Quaternary tectonic history of the region has been discussed by Love (1961).

REFERENCES

Love, J. D., 1961, Reconnaissance study of Quaternary faults in and south of Yellowstone National Park, Wyoming: Geol. Soc. America Bull., v. 72, no. 12, p. 1749–1764.

U.S. Geological Survey, 1972, Geologic map of Yellowstone National Park: U.S. Geol. Survey Misc. Geol. Inv. Map I-711.

EXPLANATION



*Denotes informal terminology.

Contact, approximately located
Dashed where inferred

Fault having Quaternary movement
Solid where map unit is offset; dashed where topographically expressed, but mantled by map unit; dotted where inferred and concealed. Bar and ball on downthrown side

PM
Upper limit of middle Pinedale ice
Dashed where inferred

PL
Upper limit of early Pinedale ice
Dashed where inferred

BL
Upper limit of Bull Lake ice

Bull Lake — Pinedale
Direction of ice movement
Shown by glacial molding of terrain

Pinedale glacial striation

Morainal ridge

Bull Lake — Pinedale
Outwash channels

Stream-terrace scarps

10
Estimated thickness of surficial deposit, in feet
<5 *indicates deposit less than 5 feet thick*

*Q,Qc
Location and kind of erratic
A, *Eocene andesite*
B, *Eocene basalt*
C, *coarse-grained Precambrian crystalline rock*
L, *limestone*
Q, *quartzite cobble from Paleocene conglomerate*
Qc, *quartzite of Cloverly Formation*
Y, *tuff of Yellowstone Group*
S, *sandstone*
P, *Paleozoic sedimentary rock*

HYDROTHERMAL FEATURES

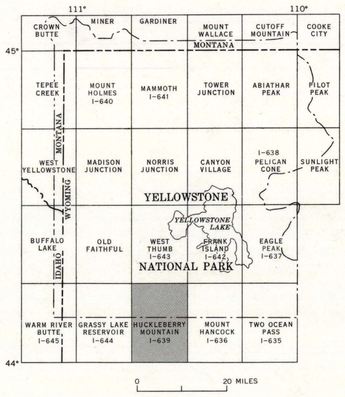
Active sinter spring

Inactive travertine deposit

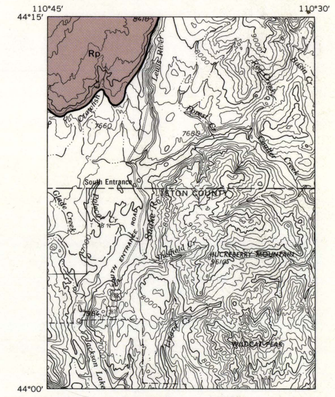
Active travertine spring

Warm spring

HA
Area of hydrothermal alteration and acid hot springs or fumaroles



INDEX MAP OF YELLOWSTONE NATIONAL PARK SHOWING LOCATION OF HUCKLEBERRY MOUNTAIN QUADRANGLE AND PUBLISHED MISCELLANEOUS GEOLOGIC INVESTIGATIONS MAPS



MAP OF HUCKLEBERRY MOUNTAIN QUADRANGLE SHOWING EXTENT OF QUATERNARY PITCHSTONE PLATEAU RHYOLITE FLOW (Rp)

From "Geologic map of Yellowstone National Park" U.S. Geol. Survey Misc. Inv. Map I-711, 1972

SURFICIAL GEOLOGIC MAP OF THE HUCKLEBERRY MOUNTAIN QUADRANGLE, YELLOWSTONE NATIONAL PARK AND ADJOINING AREA, WYOMING

By
Gerald M. Richmond

1973