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# INDEX TO PUBLISHED GEOLOGIC MAPPING IN OREGON

In recent years, published geologic mapping in Oregon has increased by leaps and bounds, to the point where it can no longer be depicted on one small index map as was done in the past. The present version, reproduced on the following pages, consists of four index maps with facing references.

Published geologic mapping in Oregon had its beginnings in 1898 with J.S.Diller's Roseburg folio, which was issued by the U.S.Geological Survey. This map was soon followed by the Coos Bay (1901) and Port Orford (1903) folios, also by Diller. Another early map, published in 1901, was done by Waldemar Lindgren to accompany his report on the gold belt of the Blue Mountains of Oregon for the Survey's 22nd annual report. These famous old works are still the basis for all geologic studies in those areas.

Although all of the earliest geologic maps were the products of the U.S.Geological Survey, in 1914 maps began to be issued by the Oregon Bureau of Mines, predecessor to the Department; and by 1940 they were being published by colleges, scientific organizations, and various public agencies, including this Department.

In 1940, the Department began its periodic printing of a small index map ($8\frac{1}{2}$ x 11 inches) showing the extent of published geologic mapping, accompanied by a list of the titles of the reports in which the maps appeared and the names of the authors. The first of these index maps showed 43 areas; by 1950 there were 73 areas. By 1956, the total number of areas to be included on the index map was 105, necessitating the use of two sheets. The division was based upon whether the map was small scale (reconnaissance) or large scale (detailed).

By the end of 1959, the number of published maps had increased to 126. For the sake of clarity, the information is now arranged on four sheets as follows: 1) large-area, or reconnaissance, maps published up to 1940; 2) those published after 1940; 3) small-area maps, or spot-locality and road-log maps; and 4) quadrangle maps.

As shown by the index maps, only about one-sixth of the total area of Oregon remains uncovered by some type of published geologic mapping. The larger remaining areas are: a section of western Douglas County between Drain and Reedsport and extending south into eastern Coos County; northern Morrow County and a strip extending south into Grant County; a long, narrow strip running east from Brothers in Deschutes County to Juntura in Malheur County; and all of Malheur County south of Juntura. Parts of these areas, however, are already covered by unpublished maps and reports in manuscript form (See April 1960 Ore.-Bin and Miscellaneous Paper No. 7).

One of the common goals of this Department and the U.S.Geological Survey is to complete and publish a state geologic map. To this end, all areas in the state which are as yet unmapped, or have received only broad reconnaissance treatment, have been assigned to geologists for field study. Already a preliminary geologic map of the western part of the state has been compiled and awaits publication by the Survey. Compilation of the state map as a whole is a long-range project, however, that requires filling in many gaps and correlating an unwieldy assemblage of information gleaned over the past 60 years of geologic mapping.

## PUBLISHED GEOLOGIC MAPPING: LARGE-AREA MAPS TO 1940
(See Index Map 1)

Butler, G.M. (and Mitchell, G.J.), Preliminary survey of the geology and mineral resources of Curry County, Oregon: Oreg. Bur. Mines & Geol. Min. Res. of Oregon, vol.2, no.2, 1916.

Callaghan, E., (and Buddington, A.F.), Metalliferous mineral deposits of the Cascade Range in Oregon: U.S. Geol. Survey Bull. 893, 1938.

Collier, A.J., The geology and mineral resources of the John Day region: Oreg. Bur. Mines & Geol. Min. Res. of Oregon, vol. 1, no. 3, 1914.

Darton, N.H., Structural materials in parts of Oregon and Washington: U.S. Geol. Survey Bull. 387, 1909.

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Lindgren, W., The gold belt of the Blue Mountains of Oregon: U.S. Geol. Survey 22nd Ann. Rpt., pt. 2, p. 551-776, 1901.

Moore, B.N., Nonmetallic mineral resources of eastern Oregon: U.S. Geol. Survey Bull. 875, 1937.

Pardee, J.T., Beach placers of the Oregon coast: U.S. Geol. Survey Circ. 8, 1934.

Piper, A.M., (1) Geology and ground-water resources of The Dalles region, Oregon: U.S. Geol. Survey Water-Supply Paper 659-B, 1932; (2) (and Robinson, T.W., and Park, C.F.), Geology and ground-water resources of the Harney basin, Oregon: U.S.Geol. Survey Water-Supply Paper 841, 1939.

Ross, C.P., (1) Geology of part of the Wallowa Mountains, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 3, 1938.

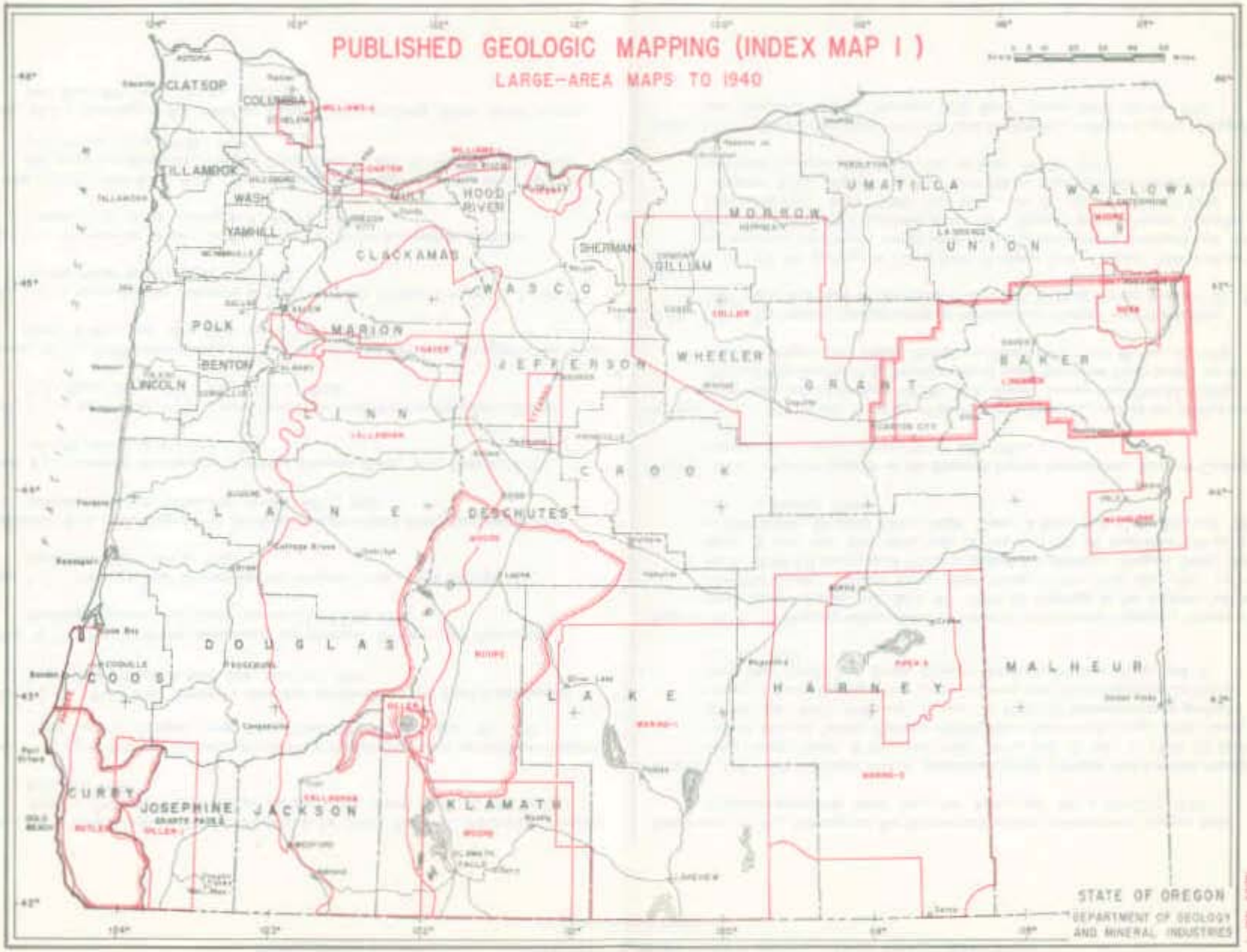
Stearns, H.T., Geology and water resources of the Middle Deschutes River basin, Oregon: U.S. Geol. Survey Water-Supply Paper 637-D, 1931.

Thayer, T.P., Geology of the Salem Hills and North Santiam River basin, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 15, 1939.

Waring, C.A., (1) Geology and water resources of a portion of south-central Oregon: U. S. Geol. Survey Water-Supply Paper 220, 1908; (2) Geology and water resources of the Harney basin region, Oregon: U.S.Geol. Survey Water-Supply Paper 231, 1909.

Washburne, C.W., Gas and oil prospects near Vale, Oregon, and Payette, Idaho: U.S. Geol. Survey Bull. 431-A, 1911.

Williams, I.A., (1) The Columbia River Gorge - its geologic history interpreted from the Columbia River Highway: Oreg. Bur. Mines & Geol. Min. Res. of Oregon, vol.2, no. 3, 1916; (2) (and Parks, H.M.), The limonite iron ores of Columbia County, Oregon: Oreg. Bur. Mines & Geol. Min. Res. of Oregon, vol. 3, no. 3, 1923.


PUBLISHED GEOLOGIC MAPPING (INDEX MAP I)
LARGE-AREA MAPS TO 1940
CLATSOP
COLUMBIA
TILLAMOOK
WASH.
YAMHILL
MULT.
HOOD RIVER
CLACKAMAS
SHERMAN
GILLIAM
MORROW
UMATILLA
WALLOWA
UNION
WASCO
POLK
MARION
JEFFERSON
WHEELER
GRANT
BAKER
BENTON
LINCOLN
LINN
CROOK
LANE
DESCHUTES
DOUGLAS
COOS
LAKE
HARNEY
MALHEUR
CURRY
JOSEPHINE
JACKSON
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# PUBLISHED GEOLOGIC MAPPING: LARGE-AREA MAPS, 1940 THROUGH 1959
(See Index Map 2)


Allen, J.E., Columbia River Gorge: Guidebook for Geol. Soc. Am. field trip excursions: Univ. of Oregon, 1958; Field guidebook: Oreg. Dept. Geol. & Min. Ind. Bull. 50, 1959.

Allen, R.M., Jr., Geology and mineralization of the Morning mine and adjacent region, Grant County, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 39, 1948.

Baldwin, E.M., Field trip, Eugene to Coos Bay via Reedsport (in: Field Guidebook): Oreg. Dept. Geol. & Min. Ind. Bull. 50, 1959.

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Hodge, E.T., Geologic map of north central Oregon: Oreg. State College Mon., Studies in Geol., no.3, 1942.

Hundhausen, R.H., Investigation of Shamrock copper-nickel mine, Jackson County, Oregon: U.S. Bur. Mines Rpt. Invest. 4895, 1952.

Lupher, R.L., Jurassic stratigraphy of central Oregon: Geol. Soc. America Bull., vol. 52, no. 2, p.219-269, 1941.

Moore, R.C., and Vokes, H.E., Lower Tertiary crinoids from northwestern Oregon: U.S. Geol. Survey Prof. Paper 233-E, 1953.

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Piper, A.M., Ground-water resources of the Willamette Valley, Oregon: U.S. Geol. Survey Water-Supply Paper 890, 1942.

Ross, C.P., Quicksilver deposits in the Steens and Pueblo mountains, southern Oregon: U.S. Geol. Survey Bull. 931-J, 1942.

Schlicker, H.G., and Dole, H.M., Reconnaissance geology of the Marcola, Leaburg, and Lowell quadrangles, Oregon: Oreg. Dept. Geol. & Min. Ind. Ore.-Bin, vol. 19, no. 7, p.57-62, 1957.

Steere, M.L., Geology of the John Day country, Oregon: Oreg. Dept. Geol. & Min. Ind. Ore.-Bin, vol. 16, no. 7, 1954.

Taubeneck, W.H., Geology of the Elkhorn Mountains, northeastern Oregon; Bald Mountain batholith: Geol. Soc. Am. Bull., vol. 68, p.181-238, 1957.

Treasher, R.C., (1) Geologic map of Josephine County (Oregon Metal Mines Handbook): Oreg. Dept. Geol. & Min. Ind. Bull. 14-C, vol. 2, sec. 1, 1942; (2) Geologic map of Jackson County (Oregon Metal Mines Handbook): Oreg. Dept. Geol. & Min. Ind. Bull.14-C, vol. 2, sec. 2, 1943; (3) Reconnaissance geologic survey in Curry County along Coast Highway from Gold Beach to California State line: Geol. Soc. Oreg. Country Geological News Letter, vol. 9, no. 13, 1943.

Wagner, N.S. (1) Ground-water studies in Umatilla and Morrow counties, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 41, 1949; (2) Geology of the southern half of Umatilla County, Oregon: Oreg. Dept. Geol. & Min. Ind. Ore.-Bin, vol.16, no.3, 1954; (3) Summary of Wallowa Mountains geology, Oregon: Oreg. Dept. Geol. & Min. Ind. Ore.-Bin, vol. 17, no.5, 1955; (4) Important rock units of northeastern Oregon: Oreg. Dept. Geol. & Min. Ind. Ore.-Bin, vol. 20, no. 7, p.63-68, 1958.

Walker, G.W., Pumice deposits of the Klamath Indian Reservation, Klamath County, Oregon: U.S. Geol. Survey Circ. 128, 1951.

Warren, W.C., (1) (et al), Geology of northwestern Oregon, west of the Willamette River and north of latitude 45°15': U.S. Geol. Survey Map OM 42, 1945; (2) (and Norbisrath, H.), Stratigraphy of upper Nehalem River basin, northwestern Oregon: Am. Assoc. Petroleum Geol. Bull., vol.30, no. 2, 1946.

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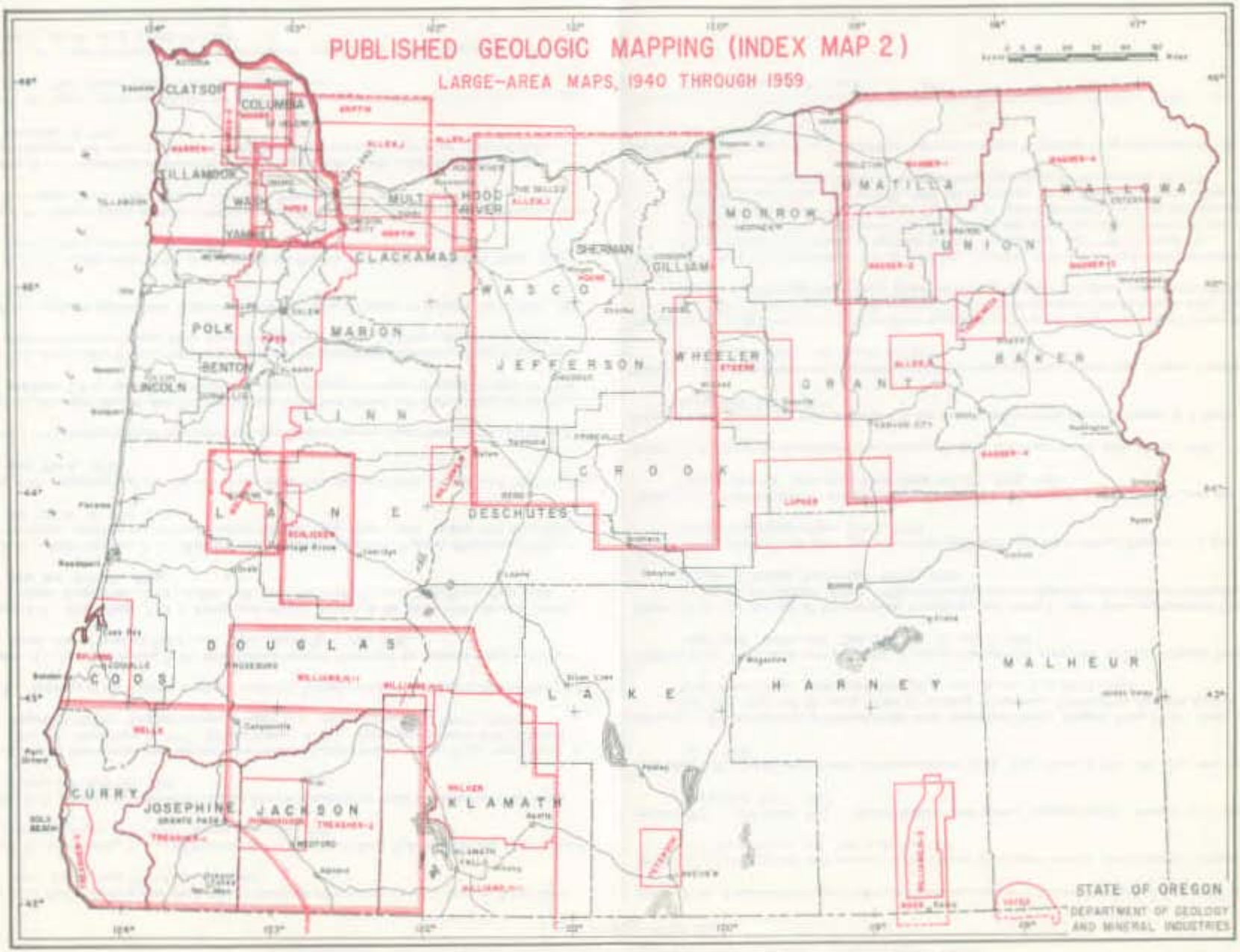
PUBLISHED GEOLOGIC MAPPING (INDEX MAP 2)
LARGE-AREA MAPS, 1940 THROUGH 1959
CLATSOP
COLUMBIA
TILLAMOOK
WASH
YAMHILL
MULT
HOOD RIVER
CLACKAMAS
SHERMAN
GILLIAM
MORROW
UMATILLA
UNION
WALLOWA
WASCO
POLK
MARION
JEFFERSON
WHEELER
GRANT
BAKER
BENTON
LINCOLN
LINN
CROOK
DESCHUTES
LANE
DOUGLAS
COOS
LAKE
HARNEY
MALHEUR
CURRY
JOSEPHINE
JACKSON
KLAMATH
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# PUBLISHED GEOLOGIC MAPPING: SMALL-AREA MAPS THROUGH 1959
## (See Index Map 3)


Allen, J.E., Perlite deposits near the Deschutes River, southern Wasco County, Oregon: Oreg. Dept. Geol. & Min. Ind. Short Paper 16, 1946.

Allen, V.T., Loofbourow, J.S., and Nichols, R.L., The Hobart Butte high-alumina clay deposit, Lane County, Oregon: U.S. Geol. Survey Circ. 143, 1951.

Bostwick, D.A., Field trip, Corvallis to Depoe Bay via Newport (in: Field Guidebook): Oreg. Dept. & Min. Ind. Bull. 50, 1959.

Brown, R.E., (1) Some manganese deposits in the southern Oregon coastal region: Oreg. Dept. Geol. & Min. Ind. Short Paper 9, 1942; (2) (and Waters, A.C.), Quicksilver deposits of the Bonanza-Nonpareil district, Douglas County, Oregon: U.S. Geol. Survey Bull. 955-F, 1951.

Bryan, K., Geology of the Owyhee irrigation project: U.S. Geol. Survey Water-Supply Paper 597-A, 1929.

Callaghan, E., (and Buddington, A.F.), Metalliferous mineral deposits of the Cascade Range in Oregon (Geol. map of Bohemia dist.): U.S. Geol. Survey Bull. 893, 1938.

Corcoran, R.E., (and Libbey, F.W.), Ferruginous bauxite deposits in the Salem Hills, Marion County, Oregon: Oreg. Dept. Geol. & Min. Ind. Ore.-Bin, vol. 17, no. 4, 1955; Oreg. Dept. Geol. & Min. Ind. Bull. 46, 1956.

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Duncan, D.C., Geology and coal deposits in part of the Coos Bay coal field, Oregon: U.S. Geol. Survey Bull. 982-B, 1953.

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Koch, G.S., Jr., Lode mines of the central part of the Granite mining district, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 49, 1959.

Libbey, F.W., Some mineral deposits in the area surrounding the junction of the Snake and Imnaha rivers in Oregon: Oreg. Dept. Geol. & Min. Ind. Short Paper 11, 1943.

Livingston, D.C., A geologic reconnaissance of the Mineral and Cuddy Mountain mining districts, Washington and Adams counties, Idaho (adjacent to Snake River): Idaho Bur. Mines & Geol. Pamphlet 13, 1925.

Lowry, W.D., Tyrrell manganese deposit and other similar properties in the Lake Creek district, Oregon: Oreg. Dept. Geol. & Min. Ind. Short Paper 10, 1943.

Merriam, C.W., (and Berthiaume, S.A.), Late Paleozoic formations in central Oregon: Geol. Soc. Am. Bull., vol. 54, no. 2, p. 145-171, 1943.

Moore, B.N., Nonmetallic mineral resources of eastern Oregon: U.S. Geol. Survey Bull. 875, 1937.

Pardee, J.T., Faulting and vein structure in the Cracker Creek gold district, Baker County, Oregon: U.S. Geol. Survey Bull. 380, p. 85-93, 1909.

Pecora, W.T., (and Hobbs, W.S.), Nickel deposits near Riddle, Douglas County, Oregon: U.S. Geol. Survey Bull. 931-I, 1942.

Peterson, N.V., Lake County's new continuous geyser: Oreg. Dept. Geol. & Min. Ind. Ore.-Bin, vol. 21, no. 9, 1959.

Ramp, L., (1) Geologic map of Chrome Ridge area, Josephine County, Oregon: Oreg. Dept. Geol. & Min. Ind. Ore.-Bin, vol. 18, no. 3, 1956; (2) Geology of the lower Illinois River chromite district: Oreg. Dept. Geol. & Min. Ind. Ore.-Bin, vol. 19, no. 4, p. 29-34, 1957.

Schafer, Max, Occurrence and utilization of carbon-dioxide-rich water near Ashland, Oregon: Oreg. Dept. Geol. & Min. Ind. Ore.-Bin, vol. 17, no. 7, 1955.

Shenon, P.J., (1) Geology of the Robertson, Humdinger, and Robert E. gold mines, southwestern Oregon: U.S. Geol. Survey Bull. 830-B, 1923; (2) Geology and ore deposits of the Takilma-Waldo district, Oregon: U.S. Geol. Survey Bull. 846-B, 1933.

Stearns, H.T., Geology and water resources of the upper McKenzie River Valley, Oregon: U.S. Geol. Survey Water-Supply Paper 597-D, 1929.

Taber, J.W., A reconnaissance of lode mines and prospects in the Bohemia mining district, Lane and Douglas counties, Oregon: U.S. Bur. Mines Inf. Circ. 7512, 1949.

Thayer, T.P., Chromite deposits of Grant County, Oregon: U.S. Geol. Survey Bull. 922-D, 1940.

Waters, A.C., (et al), Quicksilver deposits of the Horse Heaven mining district, Oregon: U.S. Geol. Survey Bull. 969-E, 1951.

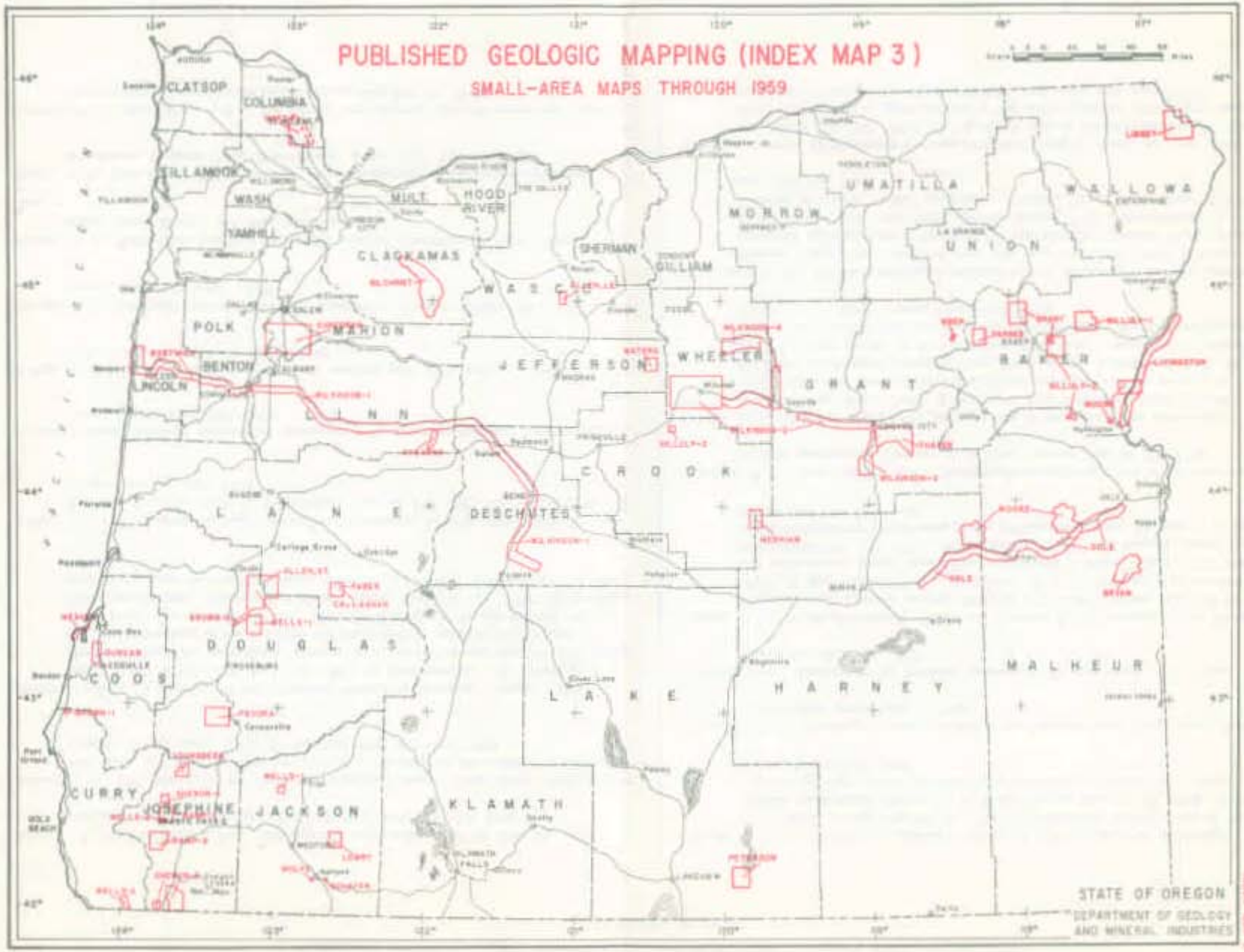
Weaver, C.E., Stratigraphy and paleontology of the Tertiary formations at Coos Bay, Oregon: Washington Univ. Pub. in Geol., vol. 6, no. 2, 1945.

Wells, F.G., (1) (and Waters, A.C.), Quicksilver deposits of southwestern Oregon: U.S. Geol. Survey Bull. 850, 1934; (2) (and Page, L.R., and James, H.L.), Chromite deposits in the Sourdough area, Curry County, and the Briggs Creek area, Josephine County, Oregon: U.S. Geol. Survey Bull. 922-P, 1940.

Wilkinson, W.D. (1) (and Schlicker, H.G.), Field trip, Corvallis to Prineville via Bend and Newberry Crater (in: Field Guidebook): Oreg. Dept. Geol. & Min. Ind. Bull. 50, 1959; (2) Field trip, Prineville to John Day via Mitchell (in: Field Guidebook): Oreg. Dept. Geol. & Min. Ind. Bull. 50, 1959; (3) (and Thayer, T.P.), Field trip, John Day to upper Bear Valley (in: Field Guidebook): Oreg. Dept. Geol. & Min. Ind. Bull. 50, 1959; (4) (and Allen, J.E.), Field trip, Picture Gorge to Portland via Arlington (in: Field Guidebook): Oreg. Dept. Geol. & Min. Ind. Bull. 50, 1959.

Wolfe, H.D., (and White, D.J.), Preliminary report on tungsten in Oregon: Oreg. Dept. Geol. & Min. Ind. Short Paper 22, 1951.

Youngberg, E.A., Mines and prospects of the Mount Reuben mining district, Josephine County, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 34, 1947.


PUBLISHED GEOLOGIC MAPPING (INDEX MAP 3)
SMALL-AREA MAPS THROUGH 1959
CLATSOP
COLUMBIA
TILLAMOOK
WASH
YAMHILL
MULT
HOOD RIVER
CLACKAMAS
SHERMAN
GILLIAM
MORROW
UMATILLA
WALLOWA
UNION
POLK
MARION
WASCO
JEFFERSON
WHEELER
GRANT
BAKER
BENTON
LINCOLN
LINN
CROOK
LANE
DESCHUTES
DOUGLAS
COOS
LAKE
HARNEY
MALHEUR
CURRY
JOSEPHINE
JACKSON
KLAMATH
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AND MINERAL INDUSTRIES

Allen, J.E. (and Baldwin, E.M.), Geology and coal resources of the Coos Bay quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 27, 1944.

Allison, I.S., (1) Geology of the Albany quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 37, 1953; (2) (and Felts, W.M.), Geology of the Lebanon quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Map with text, 1956.

Baldwin, E.M., (1) Geology of the Dallas and Valsetz quadrangles, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 35, 1947; (2) (and Roberts, A.E.) Geology of the Spirit Mountain quadrangle, Oregon: U.S. Geol. Survey Map OM 129, 1952; (3) (et al) Geology of the Sheridan and McMinnville quadrangles, Oregon: U.S. Geol. Survey Map OM 155, 1955; (4) Geology of the Marys Peak and Alsea quadrangles, Oregon: U.S. Geol. Survey Map OM 162, 1955; (5) Geologic map of the lower Siuslaw River area, Oregon: U.S. Geol. Survey Map OM 186, 1956;

Diller, J.S., U.S. Geol. Survey Atlas series: (1) Roseburg folio (no.49), 1898; (2) Coos Bay folio (no.73), 1901; (3) Port Orford folio (no.89), 1903; (4) (and Kay, G.F.), Riddle folio (no.218), 1924.

Gilluly, James, Geology and mineral resources of the Baker quadrangle, Oregon: U.S. Geol. Survey Bull. 879, 1937.

Griggs, A.B., Chromite-bearing sands of the southern part of the coast of Oregon: U.S. Geol. Survey Bull. 945-E, 1945.

Hodge, E.T., Geologic map of the Madras quadrangle, Oregon: Oregon State Coll. Mon., Studies in Geol., 1941.

Pardee, J.T., Preliminary geologic map of the Sumpter quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Map with text, 1941.

Smith, W.D. (and Allen, J.E.), Geology and physiography of the northern Wallowa Mountains, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 12, 1941.

Snavely, P.D. (and Vokes, H.E.), The coastal area between Cape Kiwanda and Cape Foulweather, Oregon: U.S. Geol. Survey Map OM 97, 1949.

Thayer, T.P., (1) Preliminary geologic map of the Aldrich Mountain quadrangle, Oregon: U.S. Geol. Survey Map MF 49, 1956;(2) Preliminary geologic map of the Mt. Vernon quadrangle, Oregon: U.S. Geol. Survey Map MF 50, 1956; (3) Preliminary geologic map of the John Day quadrangle, Oregon: U.S. Geol. Survey Map MF 51, 1956.

Treasher, R.C., Geologic history and map of the Portland area: Oreg. Dept. Geol. & Min. Ind. Short Paper 7, 1942.

Trimble, D.E., Geology of the Portland quadrangle, Oregon-Wash.: U.S. Geol Survey Map GQ 104, 1957.

Vokes, H.E. (1) (and Norbisrath, Hans, and Snavely, P.D), Geology of the Newport-Waldport area, Lincoln County, Oregon: U.S. Geol. Survey Map OM 88, 1949; (2) (and Snavely, P.D., and Myers, D.A.), Geology of the southern and southwestern border areas of the Willamette Valley, Oregon: U.S. Geol. Survey Map OM 110, 1951; (3) (and Myers, D.A., and Hoover, Linn), Geology of the west-central border area of the Willamette Valley, Oregon: U.S. Geol. Survey Map OM 150, 1954.

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Wells, F.G. (1) (et al) Preliminary geologic map of the Grants Pass quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Map with text, 1940; (2) (and Hotz, P.E., and Cater, F.W.) Preliminary description of the geology of the Kerby quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 40, 1949; (3) (and Walker, G.W.) Geology of the Galice quadrangle, Oregon: U.S. Geol. Survey Map GQ 25, 1953; (4) Geology of the Medford quadrangle, Oregon: U.S. Geol. Survey Map GQ 89, 1956.

Wilkinson, W.D., (1) Reconnaissance geologic map of the Round Mountain quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Map with text, 1940; (2) Reconnaissance geologic map of the Butte Falls quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Map, 1941; (3) (and Lowry, W.D., and Baldwin, E.M.), Geology of the St. Helens quadrangle, Oregon: Oreg. Dept. Geol. & Min. Ind. Bull. 31, 1946.

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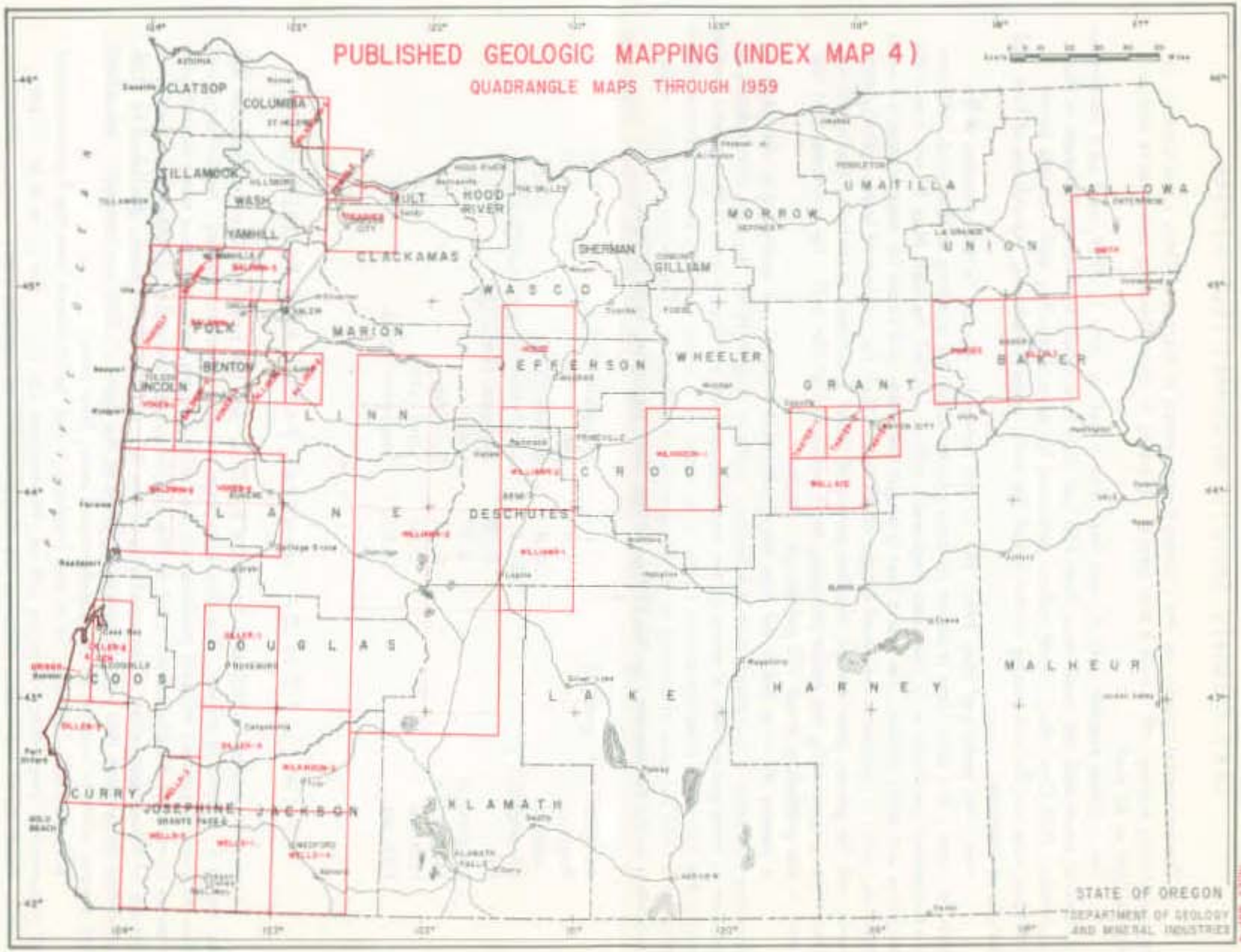
PUBLISHED GEOLOGIC MAPPING (INDEX MAP 4)
QUADRANGLE MAPS THROUGH 1959
CLATSOP
COLUMBIA
TILLAMOOK
WASH
HAMHILL
CLACKAMAS
HOOD RIVER
SHERMAN
GILLIAM
MORROW
UMATILLA
WALLOWA
UNION
BAKER
WASCO
POLK
MARION
JEFFERSON
WHEELER
GRANT
BENTON
LINCOLN
LINN
CROOK
LANE
DESCHUTES
DOUGLAS
COOS
LAKE
HARNEY
MALHEUR
CURRY
JOSEPHINE
JACKSON
KLAMATH
STATE OF OREGON
DEPARTMENT OF GEOLOGY
AND MINERAL INDUSTRIES

## LAKE COUNTY SPOUTER BECOMES TRUE GEYSER

The hot-water spouter on the Charles Crump ranch in Warner Valley, Lake County, is again making history. It is now a true geyser, erupting at approximately two-minute intervals to a height of 60 feet.

The original spouter, which burst forth from a well on July 1, 1959, sent up a continuous column of steam and hot water more than 150 feet high (see report by Norman Peterson in the September 1959 Ore.-Bin). That action continued for several months, until vandals threw boulders into the 20-inch casing at the top of the well, greatly reducing the volume of flow and height of eruption.

About the middle of May 1960, Mr. Crump noticed a change in the behavior of the spouter, and a few days later it began its truly geyser action by erupting at intervals. William Bartholomew, geologist with the State Engineer's office, visited the well May 19 and timed the eruptive and quiet phases. He found that it erupts hot water and steam for approximately twenty seconds, until it reaches a maximum height of 60 feet. Then the column of water quickly falls away and the geyser goes into an inactive period of about 2 minutes, 5 seconds, during which time steam, apparently not under pressure, rolls gently out of the well. He estimates that the well is now producing about 100 gallons per minute.

A sample of water collected from the Crump well in April was analyzed by the State Sanitary Authority. Compared with the analysis made in August 1959, the new report shows increases in parts per million of many of the constituents. Of particular note is the arsenic content, which has increased from the August figure of 0.5 ppm to 1.4 ppm. Public Health Service standards set a limit for arsenic content in drinking water at 0.05 ppm. The recent analysis, made available to the Department by the Office of the State Engineer, is as follows:

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|---|---|---|---|
| Ammonia Nitrogen (N) | 0.63 | Phosphate ($PO_4$) | 1.37 |
| Arsenic | 1.4 | pH | 8.81 |
| Calcium | 14.8 | Sulfate ($SO_4$) | 244.0 |
| Chloride ($Cl^-$) | 252.0 | Total Alkalinity ($CaCO_3$) | 113.0 |
| Iron | 0.05 | Hardness ($CaCO_3$) | 51.6 |
| Magnesium | 3.57 | Color | 4 |
| Manganese | 0.11 | Turbidity | 16 |
| Nitrates | 0.24 | Total solids | 444 |
| Nitrites | 0.072 | Suspended solids | 29 |

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## NEW EDITION OF "MINERAL FACTS AND PROBLEMS"

A new edition of "Mineral Facts and Problems" has just been published as Bulletin 585 by the U.S. Bureau of Mines. The thousand-page volume covers the history, technology, and uses of every important mineral produced in the United States, and describes many recent advances in mineral development. Each of the eighty-seven commodity chapters is written by a Bureau of Mines specialist. The popularity of the first edition of this book, published in 1956, prompted its revision this year in commemoration of the Bureau's 50th anniversary. Henceforth, the Bureau plans to publish an up-dated version every five years.

Bulletin 585, "Mineral Facts and Problems," may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. The price is $6.00 per copy. Preprints of individual chapters are also available at nominal cost.

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## CORCORAN REJOINS DEPARTMENT STAFF

Raymond E. (Andy) Corcoran has rejoined the Department staff after three years in bauxite exploratory work for Harvey Aluminum Company. Corcoran, who holds degrees from the University of California at Los Angeles and the University of Oregon, was for several years a geologist with Union Oil Company. He first joined the Department in 1953, remaining until 1957. During this time he collaborated with F.W.Libbey on Bulletin 46, "Ferruginous bauxite deposits of the Salem Hills, Marion County, Oregon." Now that he is again with the Department, Corcoran will be doing reconnaissance mapping in southeastern Oregon and will be in charge of stratigraphic correlations for the state geologic map.

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## HEARINGS ON CHROME SUPPORT BILL

Hearings on HR 5023 were held by the House Committee on Interior and Insular Affairs June 20. Authors and department officials were heard but industry representatives were not present. Congressman Al Ullman (Oregon) has notified the Department of Geology and Mineral Industries that arrangements have been made to keep the hearings open until the end of June.

HR 5023, introduced by Ullman, and its companion bill, S.1245, introduced by Senator Morse, are bills designed to promote mining and development research for beryl, chromite, and columbium-tantalum from domestic mines. Regarding chrome, the bill states that incentive payments shall be made at the following rates:

> For commercial-grade metallurgical chromite (46 per centum basis), $46 per long dry ton for the first 1,000 long dry tons produced each year by each producer, and $35 per long dry ton for each additional long dry ton produced in such year by such producer, with premiums and penalties as set forth in the regulations issued pursuant to this Act. Incentive payments shall not be made for production in any one year of more than 50,000 long dry tons by all producers or more than 5,000 long dry tons by any one producer.

The Department of Interior notified Senator James E. Murray, chairman of the Committee on Interior and Insular Affairs, May 3, that the Department favored enactment of the bill, subject to the following amendments: that the maximum incentive payment be $35 per long dry ton, and that the 5,000-ton limitation from any one producer be increased to 10,000 tons.

Persons interested in support of this bill should contact Congressman Al Ullman, House of Representatives, Washington, D.C., immediately.

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## EDEN RIDGE COAL TO BE TESTED

A 60-ton sample of coal for laboratory testing was mined at Eden Ridge in Coos County and shipped to the Colorado School of Mines in June by the Pacific Power and Light Company. PP&L started extensive geological explorations of the Eden Ridge area three years ago, when it also began investigating the possibilities of a hydroelectric development on the South Fork of the Coquille River. The company has been studying the feasibility of using the Eden Ridge coal to fuel a 100,000-kilowatt steam-electric plant which would be operated in combination with the proposed 89,000-kilowatt hydroelectric project. Laboratory tests on the coal will investigate by-products from the combustion of the coal and possible use of the coal as an industrial raw material as well as fuel.

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## MULTIPLE-USE BILL SENT TO PRESIDENT

H.R.10572 - National Forest Multiple Use - Grant (Ala.). Passed House June 2 and Senate June 8. Now awaiting President's action.

Would establish as national policy that national forests be administered for "outdoor recreation, range, timber, watershed, and wildlife and fish purposes." Senate approved a House amendment providing that "Nothing herein shall be construed so as to affect the use or administration of the mineral resources of national forest lands or to affect the use or administration of Federal lands not within national forests." (From AMC Bulletin Service, June 10, 1960.)

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## PUBLIC LAND WITHDRAWAL PROPOSED

The Bureau of Land Management has announced the proposed withdrawal (No.60-6) of public lands along the John Day and Columbia Rivers by the U.S.Army, Corps of Engineers, in connection with the John Day project. Land involved lies in parts of T.3 N., R.17 E., and T.2 N., R.18 E. in Sherman and Gilliam counties; and in T.5 N., R.26 E. in Morrow County. The withdrawal would exclude the land from mineral leasing and location of mining claims.

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## INTERIOR ISSUES NEW MINERAL SALES REGULATIONS

The Department of the Interior has adopted new regulations for the sale of common varieties of sand, stone, and gravel from lands administered by the Bureau of Land Management. The new regulations were published in the May 24 issue of the Federal Register.

Under the new regulations, sales of minerals having an appraised value of $1,000 or over must be made competitively and for not less than the appraised value. The performance bond of not less than 20 percent of the total contract price will be required for contracts of sale of $2,000 or more. The regulations also provide a procedure whereby the government can make additional timber available for on-site mining needs in instances where the government has sold timber from valid mining claims. (From AMC Bulletin Service, June 2, 1960.)

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## NEW DRILLING PERMITS ISSUED

Permit No.39 - The Department issued a new drilling permit to Ross R. Mitchell on May 25, 1960. The drilling, which is to be a shallow test, will be made on the Bliven farm about three miles south of the town of Dallas in the SE¼ sec.10, T.8 S., R.5 W., Polk County. Ross Mitchell's address is given as Box 926, Canby, Oregon.

Permit No.40 - The Department issued a new drilling permit to John T. Miller on June 6, 1960. The proposed shallow test hole will be drilled on the Charles Sullenger farm near Dallas in the NE¼ sec.18, T.8 S., R.5 W., Polk County. Mr. Miller's address is given as Box 42, Hubbard, Oregon.

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## WELL RECORDS RELEASED FROM CONFIDENTIAL FILES

The Department released records on the R.A.Stamey "Russell No.1" from its confidential files on June 26, 1960. The well was drilled in the SE¼ sec.14, T.19 S., R.44 E., Malheur County. Total depth was 4336 feet.

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