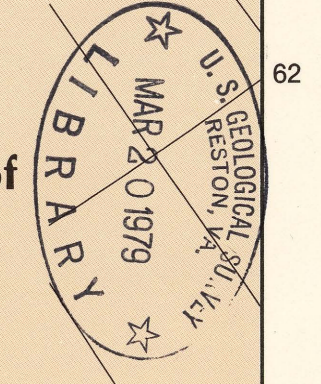
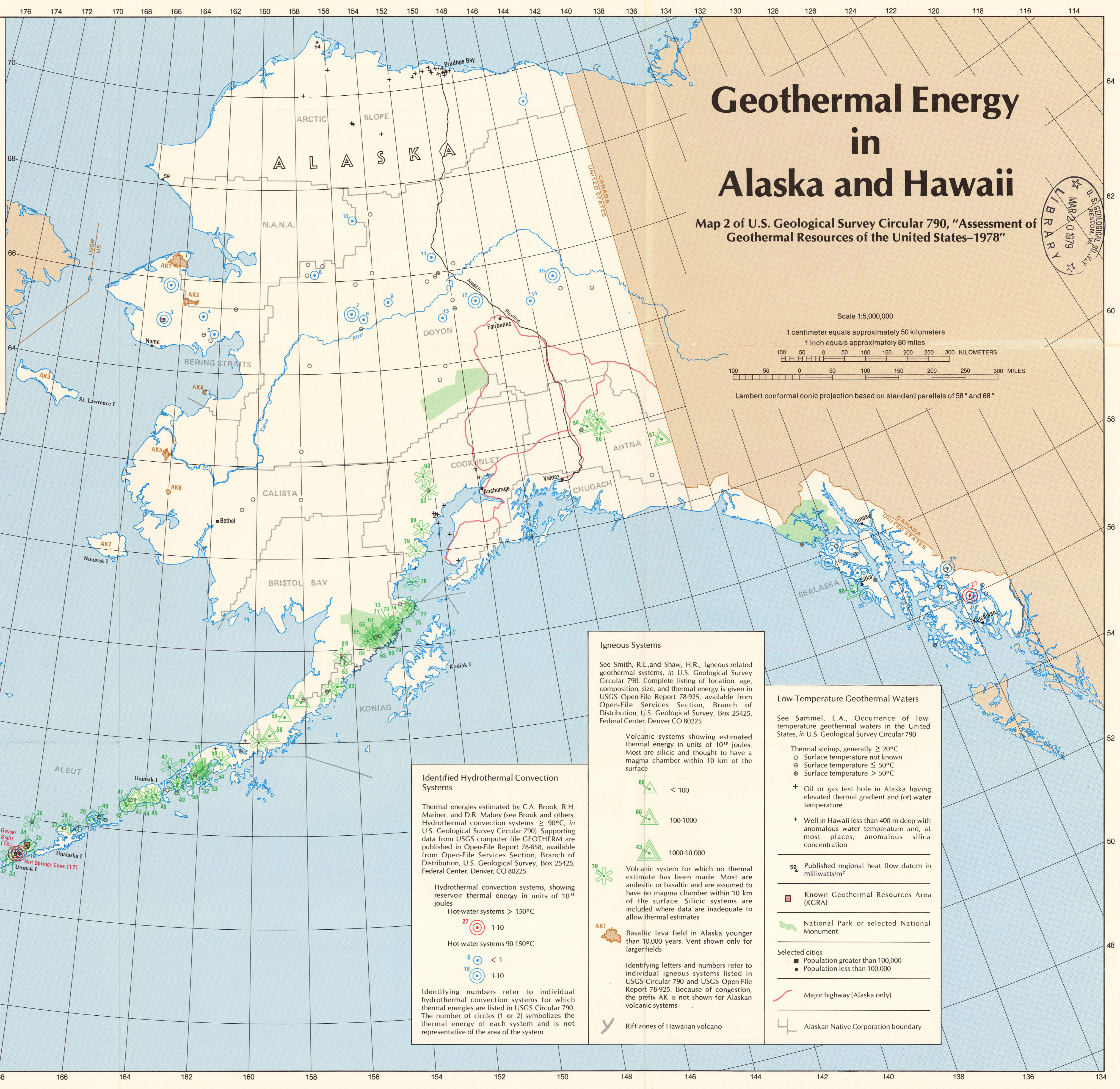
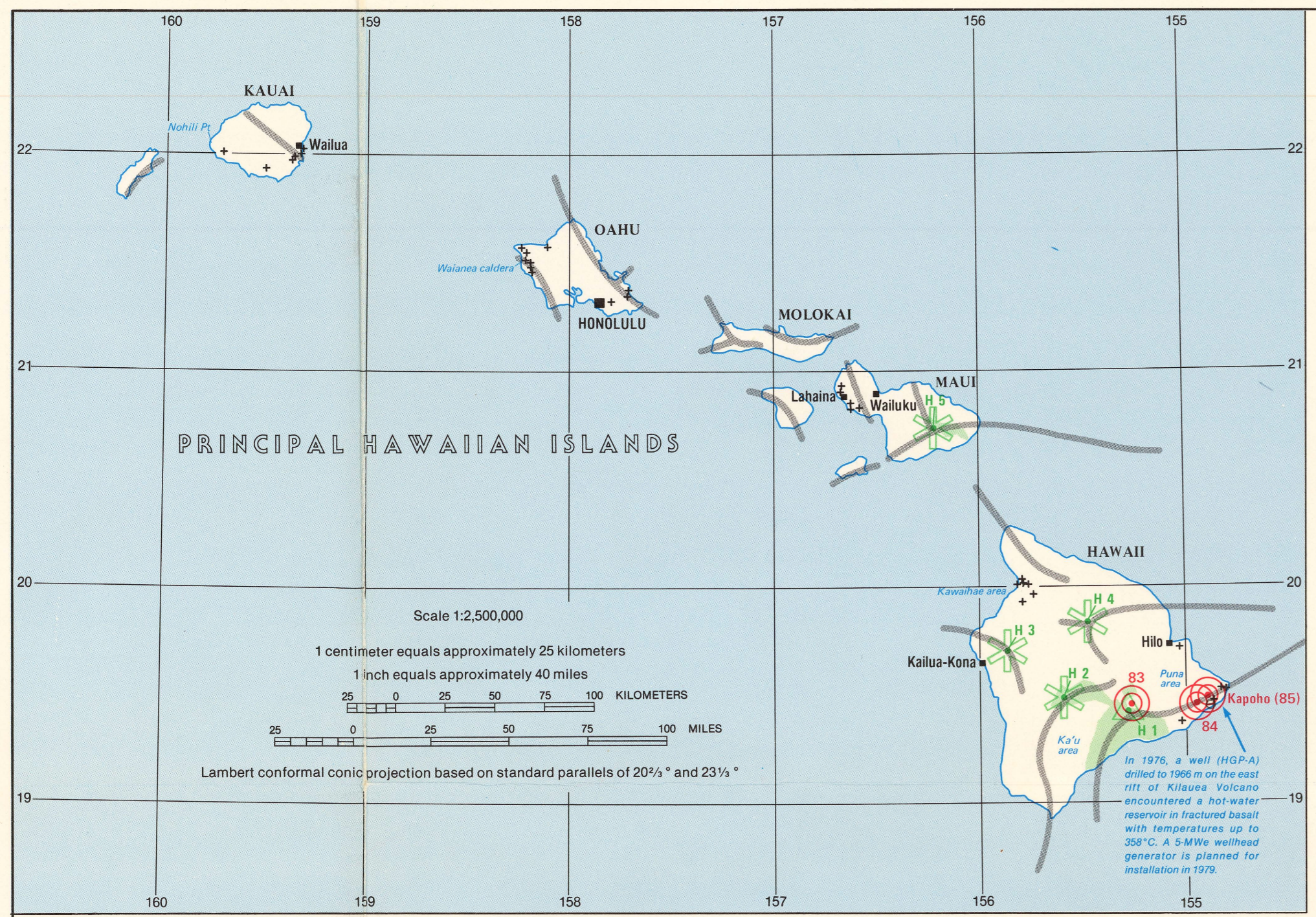
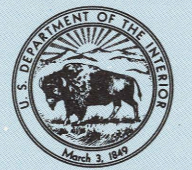
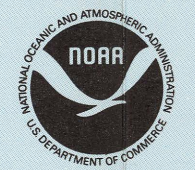


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No. 790



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1979



Igneous Systems

See Smith, R.L. and Shaw, H.R., Igneous-related geothermal systems, in U.S. Geological Survey Circular 790. Complete listing of location, age, composition, size, and thermal energy is given in USGS Open-File Report 78-925, available from Open-File Services Section, Branch of Distribution, U.S. Geological Survey, Box 25425, Federal Center, Denver, CO 80225.

Low-Temperature Geothermal Waters

See Sammel, E.A., Occurrence of low-temperature geothermal waters in the United States, in U.S. Geological Survey Circular 790.

Identified Hydrothermal Convection Systems

Thermal energies estimated by C.A. Brook, R.H. Mariner, and D.R. Mabey (see Brook and others, Hydrothermal convection systems $\geq 90^\circ\text{C}$, in U.S. Geological Survey Circular 790). Supporting data from USGS computer file GEOTHERM are published in Open-File Report 78-858, available from Open-File Services Section, Branch of Distribution, U.S. Geological Survey, Box 25425, Federal Center, Denver, CO 80225.

Hydrothermal convection systems, showing reservoir thermal energy in units of 10^{14} joules

Hot-water systems $> 150^\circ\text{C}$

Hot-water systems $90-150^\circ\text{C}$

Identifying numbers refer to individual hydrothermal convection systems for which thermal energies are listed in USGS Circular 790. The number of circles (1 or 2) symbolizes the thermal energy of each system and is not representative of the area of the system

- 58 < 100
- 60 100-1000
- 43 1000-10,000
- 78 Volcanic system for which no thermal estimate has been made. Most are andesitic or basaltic and are assumed to have no magma chamber within 10 km of the surface. Silicic systems are included where data are inadequate to allow thermal estimates
- AK1 Basaltic lava field in Alaska younger than 10,000 years. Vent shown only for larger fields

- Thermal springs, generally $\geq 20^\circ\text{C}$
- Surface temperature not known
- ◐ Surface temperature $\leq 50^\circ\text{C}$
- ◑ Surface temperature $> 50^\circ\text{C}$
- + Oil or gas test hole in Alaska having elevated thermal gradient and (or) water temperature
- + Well in Hawaii less than 400 m deep with anomalous water temperature and, at most places, anomalous silica concentration
- 59 Published regional heat flow datum in milliwatts/m²
- Known Geothermal Resources Area (KGRA)
- National Park or selected National Monument
- Selected cities
- Population greater than 100,000
- Population less than 100,000
- Major highway (Alaska only)
- Alaskan Native Corporation boundary

Map produced by Paul J. Grim (National Geophysical and Solar-Terrestrial Data Center) and George W. Berry (Earth Science Laboratory/University of Utah Research Institute) with assistance of Joy A. Ikelman, Thomas S. Jackson, and Ronald H. Smith

NGSDC/NOAA, Boulder, CO 80303

For full references, credits, and explanations of data sets, see Auffer, L.J.P., ed., 1979, Assessment of geothermal resources of the United States—1978, U.S. Geological Survey Circular 790

Unfolded map available from NOAA/National Ocean Survey, Distribution Division, C44, Riverdale, MD 20840

USGS Circular 790 with folded maps available free of charge from Branch of Distribution, U.S. Geological Survey, 1200 South Eads St., Arlington, VA 22202

The structural setting of the Aleutian chain and the presence of many young volcanic complexes suggest a large geothermal potential. However, because of remoteness, sparse population, and inclement weather, the area has not yet attracted extensive exploration effort.