MINERAL DEVELOPMENT DIVISION
DEPARTMENT OF MINES AND ENERGY
GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

DEPARTMENT OF ENERGY, MINES AND RESOURCES
DEPARTMENT OF REGIONAL ECONOMIC EXPANSION
GOVERNMENT OF CANADA

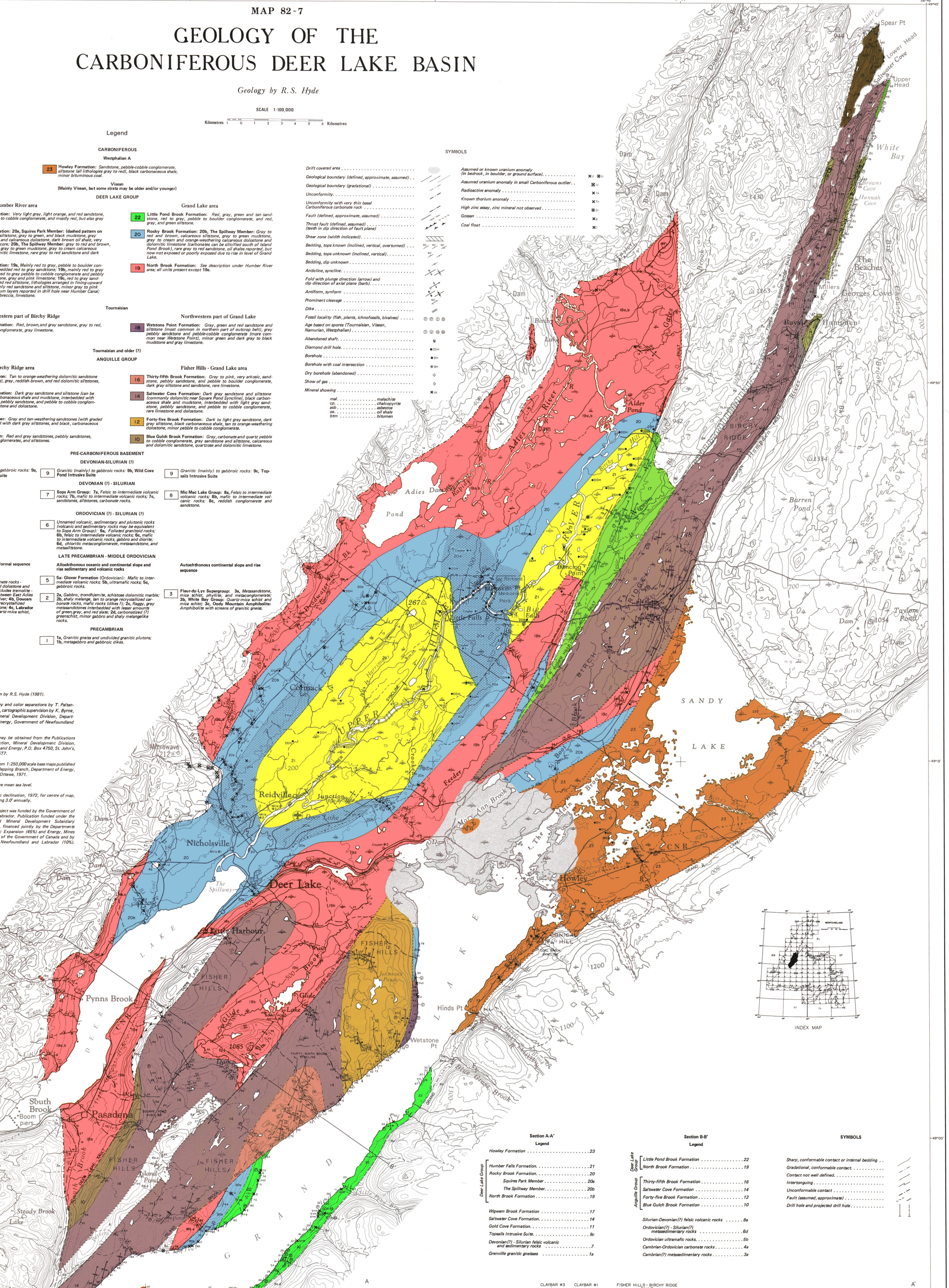
MAP 82-7

GEOLOGY OF THE CARBONIFEROUS DEER LAKE BASIN

Geology by R.S. Hyde

SCALE 1:100,000

Kilometres 1 0 1 2 3 4 5 6 Kilometres



Legend

CARBONIFEROUS

Westphalian A

23 **Howley Formation:** *Sandstone, pebble-cobble conglomerate, siltstone (all lithologies gray to red), black carbonaceous shale, minor bituminous coal.*

Visean
(Mainly Visean, but some strata may be older and/or younger)

DEER LAKE GROUP

Humber River area

21 **Humber Falls Formation:** *Very light gray, light orange, and red sandstone, pink to gray, pebble to cobble conglomerate, and mostly red, but also gray siltstone.*

20 **Rocky Brook Formation: 20a, Squires Park Member: (dashed pattern on map)** *Gray to green siltstone, gray to green, and black mudstone, gray dolomitic limestone and calcareous dolostone, dark brown oil shale, very rare gypsum in drill core;* **20b, The Spillway Member:** *gray to red and brown, calcareous siltstone, gray to green mudstone, gray to cream calcareous dolostone and dolomitic limestone, rare gray to red sandstone and dark brown oil shale.*

19 **North Brook Formation: 19a,** *Mainly red to gray, pebble to boulder conglomerate and interbedded red to gray sandstone;* **19b,** *mainly red to gray sandstone, but also red to gray pebble to cobble conglomerate and pebbly sandstone, red siltstone, gray and pink limestone;* **19c,** *red to gray sandstone and interbedded red siltstone, lithologies arranged in fining-upward sequences;* **19d,** *mainly red sandstone and siltstone, minor gray to pink limestone, thin gypsum layers reported in drill hole near Humber Canal;* **19e,** *gray limestone breccia, limestone.*

Grand Lake area

22 **Little Pond Brook Formation:** *Red, gray, green and tan sandstone, red to gray, pebble to boulder conglomerate, and red, gray, and green siltstone.*

20 **Rocky Brook Formation: 20b, The Spillway Member:** *Gray to red and brown, calcareous siltstone, gray to green mudstone, gray to cream and orange-weathering calcareous dolostone and dolomitic limestone (carbonates can be silicified south of Island Pond Brook), rare gray to red sandstone, oil shales reported, but now not exposed or poorly exposed due to rise in level of Grand Lake.*

19 **North Brook Formation:** *See description under Humber River area; all units present except* **19e.**

Tournaisian

Western part of Birchy Ridge

17 **Wigwam Brook Formation:** *Red, brown, and gray sandstone, gray to red, pebble to boulder conglomerate, gray limestone.*

Northwestern part of Grand Lake

18 **Wetstone Point Formation:** *Gray, green and red sandstone and siltstone (most common in northern part of outcrop belt), gray pebbly sandstone and pebble-cobble conglomerate (more common near Wetstone Point), minor green and dark gray to black mudstone and gray limestone.*

Tournaisian and older (?)

ANGUILLE GROUP

Birchy Ridge area

15 **Cape Rouge Formation:** *Tan to orange-weathering dolomitic sandstone (with graded bedding), gray, reddish-brown, and red dolomitic siltstones, minor tan dolostone.*

14 **Saltwater Cove Formation:** *Dark gray sandstone and siltstone (can be dolomitic), black carbonaceous shale and mudstone, interbedded with light gray sandstone, pebbly sandstone, and pebble to cobble conglomerate, very rare limestone and dolostone.*

13 **Hampden Bay Member:** *Gray and tan-weathering sandstones (with graded bedding) interbedded with dark gray siltstones, and black, carbonaceous shales.*

11 **Gold Cove Formation:** *Red and gray sandstones, pebbly sandstones, pebble to cobble conglomerates, and siltstones.*

Fisher Hills - Grand Lake area

16 **Thirty-fifth Brook Formation:** *Gray to pink, very arkosic, sandstone, pebbly sandstone, and pebble to boulder conglomerate, dark gray siltstone and sandstone, rare limestone.*

14 **Saltwater Cove Formation:** *Dark gray sandstone and siltstone (commonly dolomitic near Square Pond Syncline), black carbonaceous shale and mudstone, interbedded with light gray sandstone, pebbly sandstone, and pebble to cobble conglomerate, rare limestone and dolostone.*

12 **Forty-five Brook Formation:** *Dark to light gray sandstone, dark gray siltstone, black carbonaceous shale, tan to orange-weathering dolostone, minor pebble to cobble conglomerate.*

10 **Blue Gulch Brook Formation:** *Gray, carbonate-and quartz pebble to cobble conglomerate, gray sandstone and siltstone, calcareous and dolomitic sandstone, quartzose and dolomitic limestone.*

PRE-CARBONIFEROUS BASEMENT

DEVONIAN-SILURIAN (?)

9 *Granitic (mainly) to gabbroic rocks:* **9a, Gull Lake intrusive suite**

9 *Granitic (mainly) to gabbroic rocks:* **9b, Wild Cove Pond Intrusive Suite**

9 *Granitic (mainly) to gabbroic rocks:* **9c, Topsails Intrusive Suite**

DEVONIAN (?) - SILURIAN

7 **Sops Arm Group: 7a,** *Felsic to intermediate volcanic rocks;* **7b,** *mafic to intermediate volcanic rocks;* **7c,** *sandstones, siltstones, carbonate rocks.*

8 **Mic Mac Lake Group: 8a,** *Felsic to intermediate volcanic rocks;* **8b,** *mafic to intermediate volcanic rocks;* **8c,** *reddish conglomerate and sandstone.*

ORDOVICIAN (?) - SILURIAN (?)

6 *Unnamed volcanic, sedimentary and plutonic rocks (volcanic and sedimentary rocks may be equivalent to Sops Arm Group):* **6a,** *Foliated granitoid rocks;* **6b,** *felsic to intermediate volcanic rocks;* **6c,** *mafic to intermediate volcanic rocks, gabbro and diorite;* **6d,** *chloritic metaconglomerate, metasandstone, and metasiltstone.*

LATE PRECAMBRIAN - MIDDLE ORDOVICIAN

Autochthonous platformal sequence

4 **4a,** *Undivided carbonate rocks - variably recrystallized dolostone and dolostone breccia, includes tremolite - phlogopite marble between East Adies River and Humber River;* **4b, Doucers Formation:** *variably recrystallized limestone and dolostone;* **4c, Labrador Group:** *quartzite, quartz-mica schist, mica schist.*

Allochthonous oceanic and continental slope and rise sedimentary and volcanic rocks

5 **5a: Glover Formation** (Ordovician): *Mafic to intermediate volcanic rocks;* **5b,** *ultramafic rocks;* **5c,** *gabbroic rocks.*

2 **2a,** *Gabbro, trondhjemite, schistose dolomitic marble;* **2b,** *shaly melange, tan to orange recrystallized carbonate rocks, mafic rocks (dikes ?);* **2c,** *flaggy, gray metasandstones interbedded with lesser amounts of green, gray, and red slate;* **2d,** *carbonatized (?) greenschist, minor gabbro and shaly melangelike rocks.*

Autochthonous continental slope and rise sequence

3 **Fleur-dy-Lys Supergroup: 3a,** *Metasandstone, mica schist, phyllite, and metaconglomerate;* **3b, White Bay Group:** *Quartz-mica schist and mica schist;* **3c, Oody Mountain Amphibolite:** *Amphibolite with screens of granitic gneiss.*

PRECAMBRIAN

1 **1a,** *Granitic gneiss and undivided granitic plutons;* **1b,** *metagabbro and gabbroic dikes.*

SYMBOLS

- *Drift covered area*
- *Geological boundary (defined, approximate, assumed)*
- *Geological boundary (gradational)*
- *Unconformity*
- *Unconformity with very thin basal Carboniferous carbonate rock*
- *Fault (defined, approximate, assumed)*
- *Thrust fault (defined, assumed) (teeth in dip direction of fault plane)*
- *Shear zone (width indicated)*
- *Bedding, tops known (inclined, vertical, overturned)* — 60 90 60
- *Bedding, tops unknown (inclined, vertical)* — 60
- *Bedding, dip unknown*
- *Anticline, syncline*
- *Fold with plunge direction (arrow) and dip direction of axial plane (barb)*
- *Antiform, synform*
- *Prominent cleavage* — 60
- *Dike*
- *Fossil locality (fish, plants, ichnofossils, bivalves)* — F P I B
- *Age based on spores (Tournaisian, Visean, Namurian, Westphalian)* — T V N W
- *Abandoned shaft*
- *Diamond drill hole* — DDH
- *Borehole* — BH
- *Borehole with coal intersection* — BH
- *Dry borehole (abandoned)*
- *Show of gas*
- *Mineral showing* — cp

mal . . . malachite
cp. . . . chalcopyrite
asb . . . asbestos
os. . . . oil shale
btm . . . bitumen

- *Assumed or known uranium anomaly (in bedrock, in boulder, or ground surface)* — U U
- *Assumed uranium anomaly in small Carboniferous outlier* — U
- *Radioactive anomaly* — ra
- *Known thorium anomaly* — Th
- *High zinc assay, zinc mineral not observed* — Zn
- *Gossan* — g
- *Coal float* — c

Geological compilation by R.S. Hyde (1981).

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Base maps enlarged from 1:250,000 scale base maps published by the Surveys and Mapping Branch, Department of Energy, Mines and Resources, Ottawa, 1971.

Elevations in feet above mean sea level.

Approximate magnetic declination, 1972, for centre of map, 28° 18′ west, decreasing 3.0′ annually.

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SYMBOLS

- *Sharp, conformable contact or internal bedding*
- *Gradational, conformable contact*
- *Contact not well defined*
- *Intertonguing*
- *Unconformable contact*
- *Fault (assumed, approximate)*
- *Drill hole and projected drill hole*