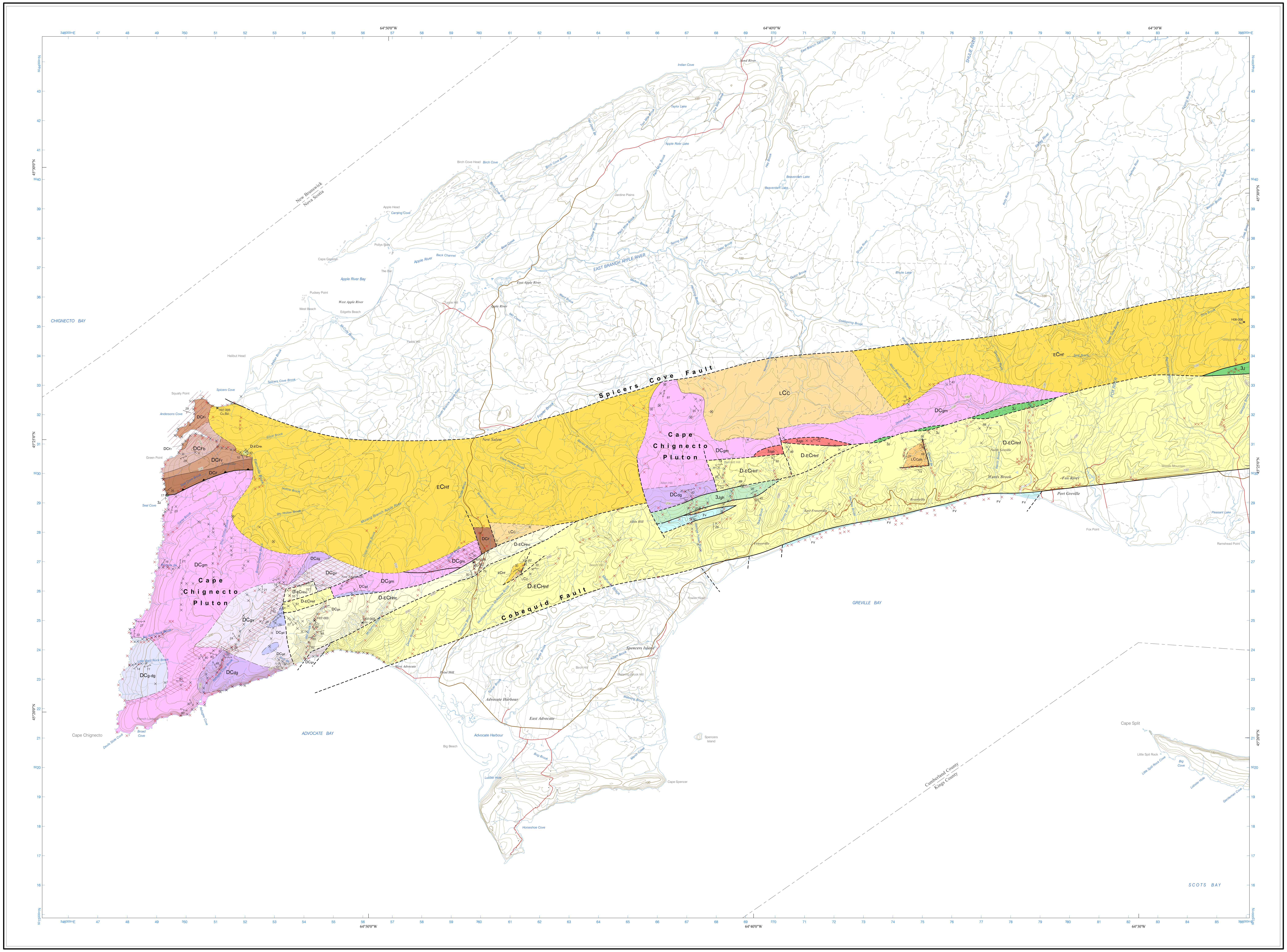

Geology Legend

(Note: legend common to all four map sheets, items may or may not be located on an individual map sheet.)

STRATIFIED ROCKS

LATE CARBONIFEROUS

CUMBERLAND GROUP

- LCc — (LCc): undivided, red sandstone and siltstone; 50 m
- LCcpb — *POLLY BROOK FORMATION* (LCcpb): red conglomerate and sandstone; 20 m

EARLY CARBONIFEROUS

HORTON GROUP and equivalents

- ECHf — *FALLS FORMATION* (ECHf): red-brown conglomerate and coarse sandstone; <1 km
- D-ECHn, D-ECHnf, D-ECHnc — *NUTTBY FORMATION* (D-ECHn): undivided, grey sandstone, siltstone and argillite, minor conglomerate, locally black, purplish or green siltstone and argillite; <1 km; (D-ECHnf): fine facies, principally argillite, siltstone and fine sandstone; (D-ECHnc): coarse facies, principally conglomerate and medium-coarse sandstone

DEVONIAN - CARBONIFEROUS

FOUNTAIN LAKE GROUP (undivided in western Cobequid Highlands)

- DCF, DCFr, DCFb — (DCF): undivided, basalt, pink and green rhyolite, minor red and grey conglomerate, sandstone and siltstone; <800 m; (DCFr): undivided, principally rhyolite; (DCFb): undivided, principally basalt
- DCFds, DCFdc, DCFdb, DCFdr — *DIAMOND BROOK FORMATION* (eastern Cobequid Highlands) 1.5 km; (DCFds): sandy facies, grey, brown and red, medium and fine sandstone, red and minor grey siltstone and shale, minor conglomerate and basalt; (DCFdc): conglomeratic facies, well sorted, pebble conglomerate, minor coarse and medium, red and brown sandstone; (DCFdb): basalt facies, basalt flows, locally vesicular, minor red siltstone and grey sandstone; (DCFdr): rhyolite facies, grey or pink, flow-banded rhyolite, minor tuff and volcaniclastic sandstone
- DCFbb — *BYERS BROOK FORMATION* (eastern Cobequid Highlands)(DCFbb): grey and pink, rhyolitic tuff with minor agglomerate, rhyolite and basalt flows, and volcaniclastic sandstone; 1-4 km

(?) MIDDLE DEVONIAN

- Dmb — *MURPHY BROOK FORMATION* (Dmb): rhyolite-clast conglomerate, sandstone, siltstone and black argillite (possibly part of Horton Group); 300 m

SILURIAN - EARLY DEVONIAN

- EDp — *PORTAPIQUE RIVER FORMATION* (EDp): red and green siltstone and fine sandstone; 1 km
- Sw — *WILSON BROOK FORMATION* (Sw): grey, fine sandstone and siltstone; 1.5 km

NEOPROTEROZOIC

JEFFERS BLOCK (western and northeastern Cobequid Highlands)

- 3J — *JEFFERS GROUP* (3J): undivided, andesite, dacite and rhyolite flows and tuff; lithic arkose, siltstone and argillite
- 3Jc — *CRANBERRY LAKE FORMATION* (western Cobequid Highlands between Five Islands and Parrsboro) (3Jc): grey, lithic arkose, siltstone and argillite; minor rhyolite tuff; >300 m
- 3Jgh — *GILBERT HILLS FORMATION* (western Cobequid Highlands between Five Islands and Parrsboro) (3Jgh): andesite and dacite flows and minor tuff; rhyolite flows, tuff and agglomerate; >200 m
- 3Jdm — *DALHOUSIE MOUNTAIN FORMATION* (eastern Cobequid Highlands, north of Mount Thom) (3Jdm): andesite, dacite and rhyolite flows and tuff; siltstone and argillite; >300 m

BASS RIVER BLOCK (southeastern Cobequid Highlands)

- 3fr — *FOLLY RIVER FORMATION* (tectonic slices in Bass River Block, in southeastern Cobequid Highlands) (3fr): basalt, tuffs, chert and silty turbidites, commonly deformed to chloritic schists; >100 m
- K3gb — *GAMBLE BROOK FORMATION* (K3gb): fine grained orthoquartzites and psammitic schists; >500 m

PLUTONIC ROCKS

EARLY CARBONIFEROUS

- Cdg — (Cdg): gabbro/diorite with <5% granite dykes and pods. Gabbro/diorite is texturally uniform, fine- or medium-grained, and includes augite gabbro and hornblende diorite. Granite is pink, orange or grey, alkali feldspar granite
- Cdgg — (Cdgg): gabbro/diorite with 5-30% granite dykes and pods
- Ch — (Ch): hybrid granite and mafic intrusive rocks, with mingling textures
- Cgp — (Cgp): intrusive rhyolite and porphyry
- abundant diabase dykes and sills

LATE DEVONIAN - EARLY CARBONIFEROUS

- DCg — (DCg): granite, undivided, principally pink, orange or grey, alkali feldspar granite
- DCgf — (DCgf): fine grained granite
- DCgm — (DCgm): medium grained granite
- DCgc — (DCgc): coarse grained granite
- DCgp — (DCgp): intrusive rhyolite and porphyry
- DCgv — (DCgv): granite, variable occurrence of several different types of granite
- DCh — (DCh): hybrid granite and mafic intrusions
- DCdg — (DCdg): gabbro/diorite with <5% granite dykes and pods. Gabbro/diorite is texturally uniform, fine- or medium-grained, and includes augite gabbro and hornblende diorite. Granite is pink, orange or grey, alkali feldspar granite
- DCdgg — (DCdgg): gabbro/diorite with 5-30% granite dykes and pods
- DCg-dg — (DCg-dg): subequal bodies of gabbro/diorite and of granite (on a scale of tens to hundreds of metres)
- DCgd — (DCgd): granodiorite, tonalite, texturally uniform, with minor biotite and/or hornblende
- DCgb — (DCgb): gabbro/diorite, texturally uniform, fine- or medium-grained, augite or augite-hornblende gabbro
- mylonite with varied igneous protolith

NEOPROTEROZOIC

JEFFERS BLOCK

- 3Jg — **Gunshot Brook granite** (northeastern Cobequid Highlands) (3Jg): with minor mafic rocks, equigranular, medium- or coarse-grained, alkali feldspar granite
- 3Jgd — **Jeffers Block granodiorite** (western and northeastern Cobequid Highlands)(3Jgd): principally coarse grained granodiorite with lesser quartz diorite and tonalite, common mafic enclaves and felsic dykes
- 3Jgb — **Jeffers Block gabbro** (western and northeastern Cobequid Highlands) (3Jgb): porphyritic, fine grained gabbro

BASS RIVER BLOCK

- 3Bg — **McCallum Settlement granite** (southeastern Cobequid Highlands)(3Bg): medium- to coarse-grained, pink, equigranular, alkali feldspar granite
- 3Bgd — **Debert River granodiorite** (southeastern Cobequid Highlands)(3Bgd): medium- to coarse-grained, biotite granodiorite with synmagmatic foliation
- 3Bdg — **Frog Lake gabbro** (southeastern Cobequid Highlands)(3Bdg): texturally inhomogeneous hornblende gabbro with tonalite veins.
- Ke — **Economy River orthogneiss** (southeastern Cobequid Highlands) (Ke): mylonitic hornblende granodiorite

FAULT ZONES with a variety of rock types

- 3Fis — (3Fis): tectonic slices of Neoproterozoic igneous and metasedimentary rocks
- Fv — (Fv): fault zone with subvertical, sheared or cataclastic to mylonitic rocks
- Fh — (Fh): fault zone with subhorizontal foliated rocks

Geological Symbols

- Geological boundary (defined, approximate)
- Geological boundary (gradational within pluton)
- Limit of geological mapping
- Fault (defined, assumed)
- Thrust fault (defined, assumed)
- Bedding (inclined) 65
- Foliation (inclined) 72
- Outcrop (rock outcrop, float)[1]
- Outcrop (from Donohoe and Wallace, 1982)
- Mineral occurrence (NSMOD#, commodity)[2] H07-007 Cu, Pb
- Diamond-drill hole (NSDDH#)[3] 2896

[1] Only selected outcrops are shown on the map. Information on all outcrops is provided in a Fieldlog database, available from Nova Scotia Department of Natural Resources.

[2] Nova Scotia Mineral Occurrence Database (NSMOD) selected entries.

Commodity:

Ag	*Silver*	Cu	*Copper*	Pb	*Lead*
As	*Arsenic*	F	*Fluorite*	Th	*Thorium*
Au	*Gold*	Fe	*Iron*	U	*Uranium*
Ba	*Barite*	Mn	*Manganese*	Zn	*Zinc*
Co	*Cobalt*	Ni	*Nickel*		

Diatomite and aggregate mineral occurrences are not shown. Not all reported mineral occurrences were confirmed by field investigation.

[3] Nova Scotia Diamond-drill hole Database (NSDDH) selected entries.

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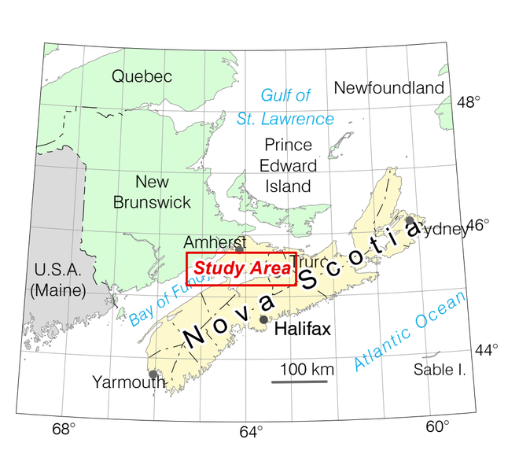

Credits

Geology by Georgia Pe-Piper, Department of Geology, Saint Mary's University and David J.W. Piper, Geological Survey of Canada (Atlantic).

Cartographic design and production by Nova Scotia Department of Natural Resources, Graphic and Mapping Services and Geoscience Information Services Section, 2005.

Base data derived from the Nova Scotia Topographic Database (NSTDB). Copyright, Province of Nova Scotia. All rights reserved. The NSTDB is available from Service Nova Scotia and Municipal Relations, Nova Scotia Geomatics Centre, 160 Willow St., Amherst, Nova Scotia.

Mineral occurrences derived from the Nova Scotia Department of Natural Resources, Mineral Occurrence Database, 2004.

Diamond-drill holes derived from the Nova Scotia Department of Natural Resources, Drillhole Database, 2004.

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Nova Scotia Department of Natural Resources
Mineral Resources Branch

Open File Map ME 2005-114

Bedrock Geology Map of the

Cape Chignecto Area (parts of NTS sheets 21H/07 and 21H/08)

Cobequid Highlands,

Nova Scotia

G. Pe-Piper and D.J.W. Piper

Scale 1:50 000

kilometres 1 0 1 2 3 4 kilometres

Universal Transverse Mercator (UTM) Projection, Zone 20, Central Meridian 63°00' West
North American Datum (NAD) 1983

References

The following paper provides a comprehensive bibliography and a synopsis of the geology of the Cobequid Highlands:

Pe-Piper, G. and Piper, D.J.W. 2003: A synopsis of the geology of the Cobequid Highlands; Atlantic Geology, v. 38(2), p.145-160.

Selected outcrop locations derived from:

Donohoe, H.V., Jr. and Wallace, P.I. 1982: Geological maps of the Cobequid Highlands, Colchester, Cumberland and Pictou counties, Nova Scotia; Nova Scotia Department of Mines and Energy, Maps 1982-6, 1982-7, 1982-8 and 1982-9, scale 1:50 000.

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Recommended Citation

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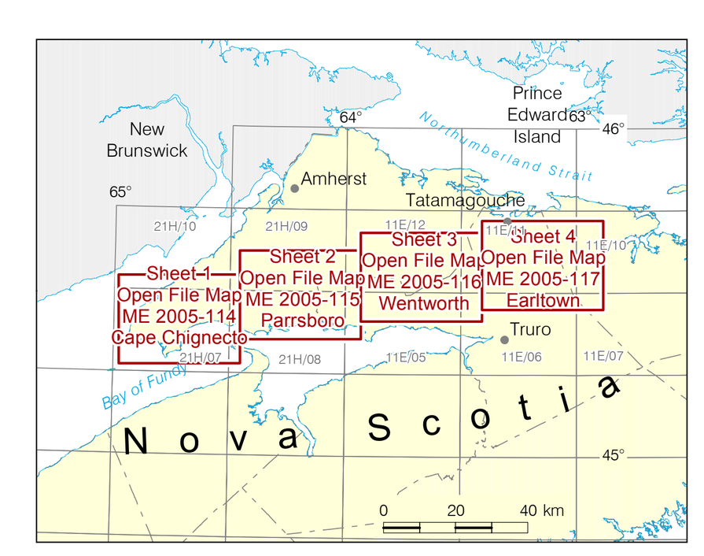

Legend

- Trans-Canada Highway
- Arterial trunk highway
- Trunk highway
- Collector highway
- Hard surface
- Loose surface road
- Resource access road
- Vehicle track
- Railway
- Railway abandoned
- Power line (single, multiple)
- County line
- Contour 20 m
- Contour 100 m (index)
- Hydrographic feature
- Rock in water