



*NPGS Niagara Peninsula Geological Society Field Trip Info Sheet
Ridgemount & Ridgemount "South" Quarries, Ridgemount, ON*

Location name: Ridgemount & Ridgemount "South" Quarries

Both quarries require FULL SAFETY GEAR.



1) Ridgemount Quarry is a by-permission-to-collect site

& requires that you have an amber beacon light on your car.

Collecting is on Fridays only - from spring until fall - and is open to the public by permission.

- a) If you attend as a "general public" member, you'll be required to sign a Walker Brothers (quarry owners) liability insurance waiver. Please ensure, too, that you phone 905-680-3792 to make a reservation with the Gatehouse staff member.
- b) If you are part of a club-scheduled trip, then you'll also sign a second liability insurance waiver for the geology club - and, you won't need to make a reservation ahead of time.

Latitude & Longitude Ridgemount Quarry parking lot - 42.929862 -79.004605 (where we meet up & where the gatehouse is)

No GPS co-ordinates for Ridgemount Quarry collecting area - collecting area changes every year - and may even change during a season - we will be directed by the Gatehouse as to where we can collect.

2) Ridgemount "South" Quarry is both a by-permission-&-club-scheduled-to-collect site

Collecting is usually scheduled on the same Friday as a Ridgemount Quarry club-scheduled-trip such as, Ridgemount Quarry-morning & Ridgemount "South" Quarry-afternoon.

Latitude & Longitude Ridgemount "South" Quarry entry gate - 42.914635 -79.003565

Latitude & Longitude Ridgemount "South" Quarry approx parking area - 42.914883 -79.005819

Ridgemount "South" Quarry collecting areas are north-ish of the parking area as well as down in the old quarry area. Please stay away from all water and swampy areas.

Because Ridgemount Quarry is a working quarry, normally, you need to be 16 years old or older. Nevertheless, that said, Walker Brothers does sometimes allow school groups. You will need to call the gatehouse and find out whom to speak to for school groups.

Dating, stratigraphy, and fossils: *(new stratigraphy as of 2018 + 2017 ICS dating)*

Stratigraphy of the Upper Silurian to Middle Devonian, Southwestern Ontario; Shuo Sun; University of Western Ontario doctorate thesis; 2018

"Ridgemount Quarry North exposes a 14.25 m of section of the Bois Blanc and Bertie Formations.

- All five members of the Bertie Formation and contact with the overlying Bois Blanc Formation are exposed.

Ridgemount Quarry South, an abandoned quarry, partly covered by water, exposes 10.7 m of upper Bertie to Middle Devonian Onondaga Formations at its north side.

UPPER SILURIAN into LOWER DEVONIAN - Bertie Formation (Bass Islands)

- uppermost strata of Niagara Escarpment (cuesta) - Salina Group
- usually dated to the Upper Silurian/Přídolí Epoch (423±2.3 to 419.2±3.2 Ma) into the Lower Devonian/Lochkovian Epoch (419.2±3.2 to 410.8±2.8 Ma)

1) lowest strata: Oatka Shale/Member

- greenish, greenish dark grey, wavy or irregular bedded, interbeds of shale & shaly dolostone
- selenite discs
- very few fossils

2) **Fiddlers Green Formation** *(Falkirk Member)*

- dark brown, hard, dolomitic cryptalgal boundstone/thrombolitic mounds, stylo-seams, mottling, dessication cracks
- brachiopods (*Whitfiedella*), ostracods, eurypterids (*Eurypterus remipes lacustris*), conodonts (*Ozarkodina remscheidensis*), petroliferous microbial laminites



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- *plants: Cooksonia, Hostinella [rare] [New Silurian cooksonias from dolostones of north-eastern North America, D Edwards, H P Banks, S J Cieurca Jr, R S Laub; Botanical Journal of the Linnean Society; 2004]*
- 3) Scajaquada Shale/Member
- dark grey to greenish grey, argillaceous or shaly dolostones or thin-bedded shales
 - selenite discs, salt hoppers are common
 - no fossils
- 4) **Williamsville Member**
- pale-grey to light grey, fine-grained argillaceous dolostones interbedded with clayey dolomudstones
 - *eurypterids (Eurypterus remipes lacustris) (usually fragments), brachiopods (Eccentricosta), fish (Nerepisacanthus denisoni) **, trace fossils (Trypanites [narrow, cylindrical, unbranched borings], Thalassinoides [branched cylindrical burrows interconnected by vertical shafts])*
 - ***[Oldest Near-Complete Acanthodian: The First Vertebrate from the Silurian Bertie Formation Konservat-Lagerstätte, Ontario; Carole J Burrow, David Rudkin; PLOS ONE; 2014]*
- 5) uppermost strata: Akron Member
- grey, massive to wavy bedded, fenestrae vuggy dolomudstone with buff-grey common mottles, some glauconite in seams, some sphalerite
 - *carbonaceous seams, ostracods (Leperditia) plus brachiopod & coral molds at the top*
- 6) Bass Islands Formation (Sun proposes this as more-or-less an overlying sixth member of the Bertie Formation in the Niagara area.)
- when present in the Niagara region, overlies the Akron Member
 - brown to light grey, variably laminated and thrombolitic, mottled, argillaceous or bituminous dolostone with very common breccias, evaporite interbeds
 - fossils are rare

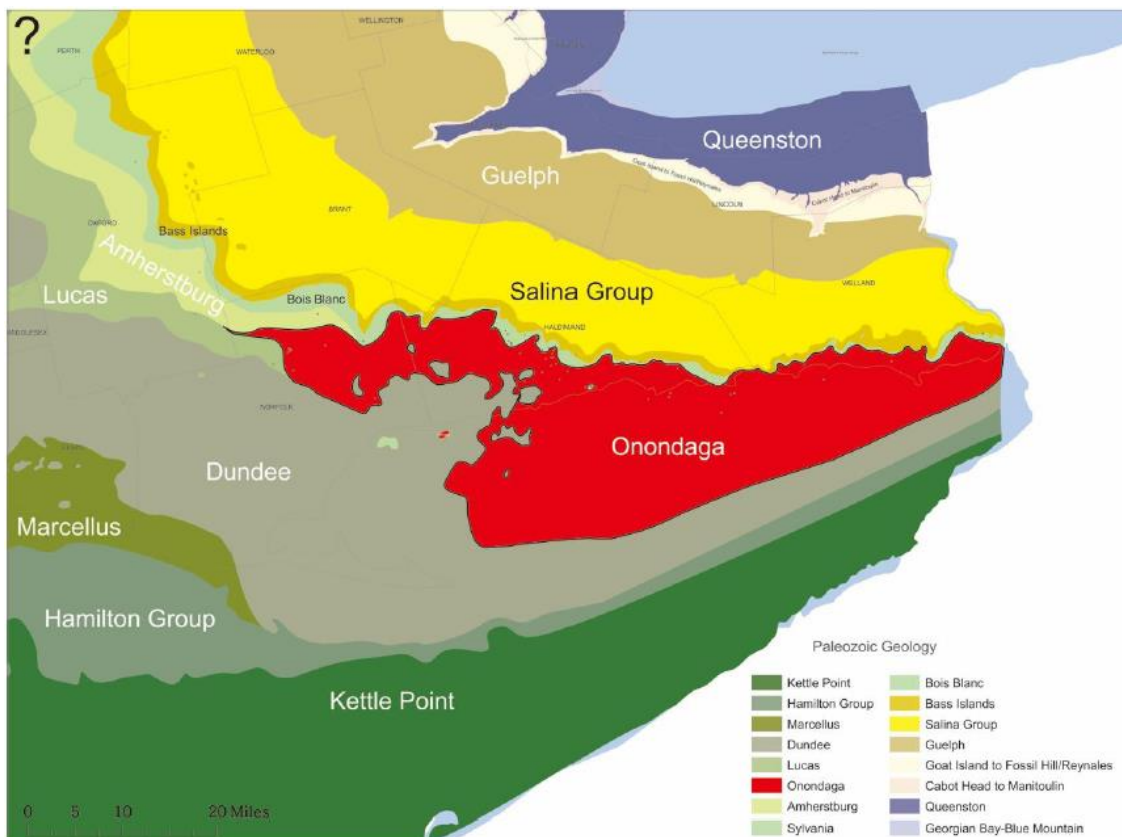
LOWER DEVONIAN - erosional/sandstone unconformities & **Bois Blanc Formation**

- unconformities are patchy outcrops (hence, hard to find & determine + very similar since are white sandstones)
 - usually dated to Lower Devonian/Pragian Epoch (410.8±2.8 to 407.6±2.6 Ma)
- 1) Oriskany Formation/Sandstone
- thick-bedded or massive, medium to coarse grained, loosely cemented quartz, white sandstone with reworked Silurian dolostone at the base
 - *burrow trace fossils (Thalassinoides, Trypanites [rare]), brachiopods (Costispirifer, Rosemarie, Acrospirifer, Hipparionyx), gastropods, ostracods, conodonts (Icriodus, Ozarkodina?)*
 - *possible Rosemarie faunal zone*
- 2) Springvale Member/Sandstone (Sun proposes this as the lower member of the Bois Blanc Formation.)
- directly underlies the Onondaga Formation when Bois Blanc Formation is absent
 - glauconitic and phosphatic, light brown-bluish or pinkish white, medium- to coarse- grained orthoquartzitic arenite sandstone with abundant wispy greenish and argillaceous microstylo-seams, chert nodules, calcite cements, hematite-stained clasts of dolomudstone
 - *brachiopods (Meristina, Amphigenia) [tend to be large-sized]*
- 3) **Bois Blanc Formation**
- uppermost strata of the Lower Devonian
 - usually dated to the Lower Devonian/Emsian Epoch (407.6±2.6 to 393.3±1.2 Ma)



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- thin- to medium- bedded, microcrystalline, brownish grey dolostone or limestone with dark to light grey chert nodules - can be glauconitic.
 - brachiopods (*Amphigenia*, *Acrospirifer duodenaria*, *Coelospira Camilla*, *Centronella glansfagea*), bryozoans, gastropods, siliceous sponges, small rugose corals, rare tabulate corals
- 4) unnamed sandstone unconformity
upper LOWER DEVONIAN–*lower MIDDLE DEVONIAN* - *Onondaga Escarpment (cuesta)*
- dating crosses the Emsian-Eifelian epochs boundary (407.6±2.6 to 393.3±.2 Ma & 393.3±1.2 to 387.7±0.8 Ma)
- 1) **Edgecliff Member**
- medium brown to medium grey, cherty coral-crinoidal wackestone, sometimes shale
 - large crinoid columnals, colonial rugose corals (*Acinophyllum*, *Synaptophyllum*), solitary rugose corals (*Heterophrentis*, *Heliophyllum*, *Cycstiphyllum*), tabulate corals (*Cladopra*, *Thamnopora*), fenestral bryozoans
 - also bioherms contain tabulate corals (*Cladopora*), colonial rugose corals (*Acinophyllum*), crinoids, solitary rugose corals, brachiopods (*Dalejina* - *Acinophyllum-Synaptophyllum Zone*), trilobites, gastropods, bryozoans
- 2) Clarence Member [Nedrow Member]
- dark grey lime-mudstone with very abundant black chert nodules
 - rare fossils
- 3) lower Moorehouse Member (middle & upper not present in Niagara region)
- fossiliferous dark grey limestones
 - may cross the Emsian-Eifelian (Early Devonian-Middle Devonian) contact,
 - similar to Edgecliff Member; however, colonial rugose corals aren't present, solitary rugose corals are dominated by *Eridophyllum*, *Heliophyllum*, bioherms aren't present, brachiopods (*Eridophyllum-Heliophyllum Zone*)
- 4) Seneca Member - not present in the Niagara region"



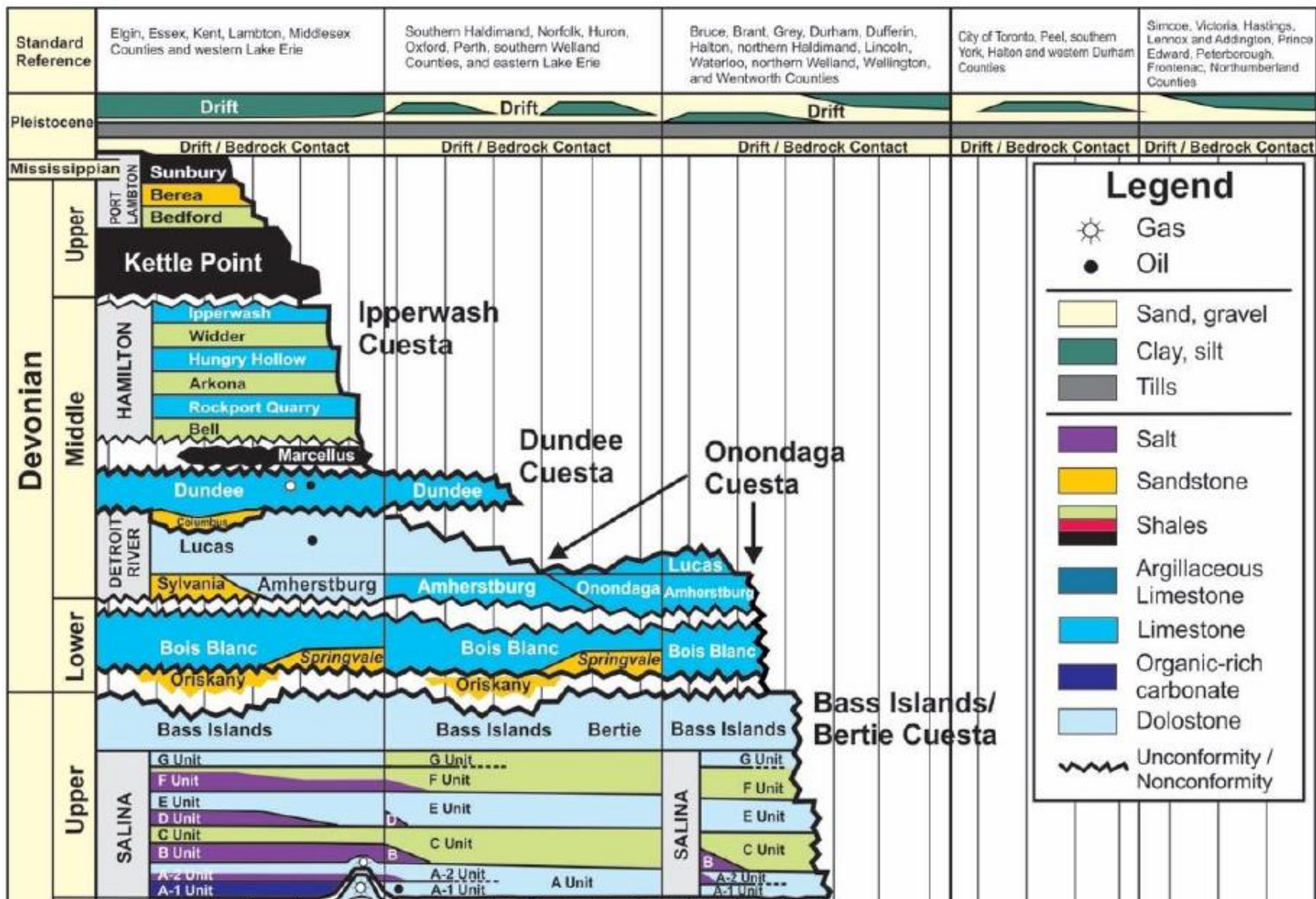
Paleozoic bedrock geology of southern Ontario.

The Onondaga Formation subcrops in the Niagara area as well as beneath western Lake Erie. It grades into Amherstburg and Lucas formations westward in northern Norfolk County. The eastern edge of the Onondaga extends through Lake Erie.

(modified Summary of Field Work and Other Activities 2017; edited by R M Easton, A F Bajc, S M Hamilton, D R B Rainsford, M Duguet, O M Burnham, R-L Simard and R D Dyer; Ontario Geological Survey; pages 253-270)



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Niagara takes pictures on all our field trips, which we post to our website & Facebook. It is your responsibility to let a field trip leader and/or a picture-taker know that you don't want to be in pictures. Thanks.