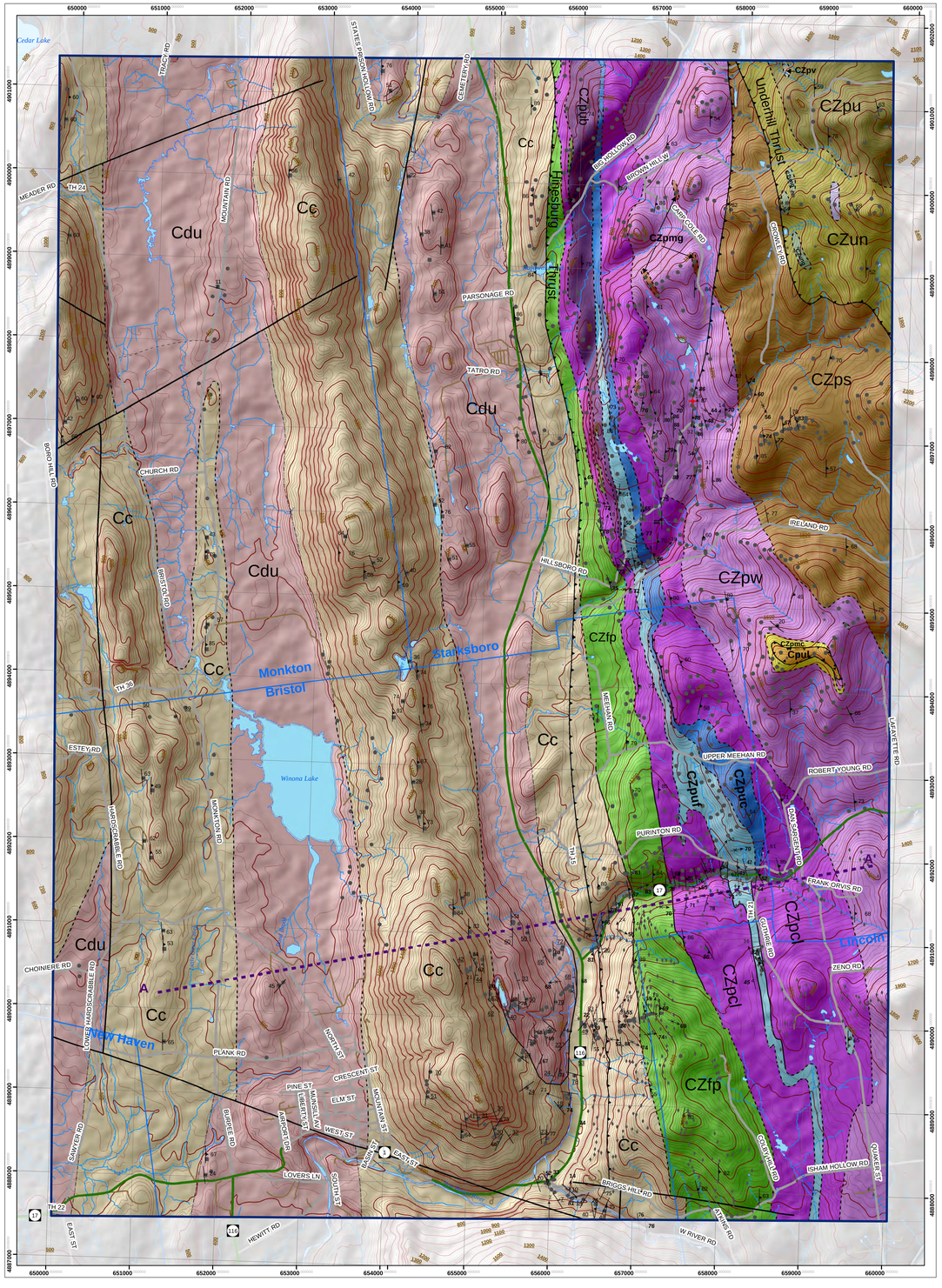


Kilometers
0 0.5 1 2 3 4

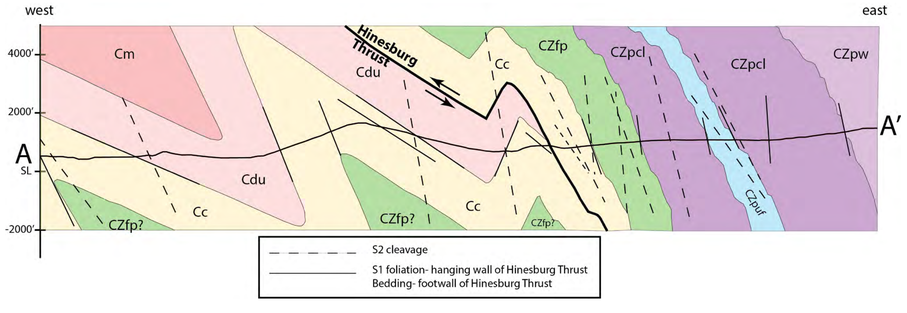
Miles
0 0.5 1 2

scale = 1: 24,000
contour interval = 20'

MN
15 degrees

Bedrock Geologic Map of the Bristol Quadrangle

Authors: Jonathan Kim, Eric Weber, and Keith Klepeis



Description of Map Units

Cretaceous

+ Massive, dark gray, granular, unfoliated lamprophyre

Lower Cambrian

Monkton Formation

Cm — Dark red, well-bedded, ferruginous quartzite.

Dunham Formation

Cdu — Brown-weathering, massive, irregularly-bedded gray to white dolostone.

Cheshire Formation

Cc — Gray phyllitic (argillaceous) quartzites east of the Hinesburg Thrust with more massive and bedded quartzites with conspicuous smoky gray quartz pebbles west of this thrust.

Upper Neoproterozoic- Lower Cambrian

Fairfield Pond Formation

CZfp — Grayish-green phyllites and phyllitic quartzites.

Upper Neoproterozoic

Pinnacle Formation

CZpcl — Green chloritic metagreywacke and schist member

- CZpuq — Quartz-pebble unit
- CZpub — Biotite-bearing unit
- CZpul — Thinly-bedded unit

CZpuf — Forestdale marble member; brown-weathering dolomitic marble interlayered with green phyllites and phyllitic quartzites.

CZpuc — Fine-grained metagreywacke member

CZpw — Quartz-albite-sericite metagreywacke member

- CZpmc — Conglomeratic unit
- CZpmg — Graded-bed unit
- CZpl — Quartz-sericite metagreywacke unit

CZps — Metawacke and phyllite member; gray massive metawacke and grayish-green schist and phyllite.

CZpu — Undifferentiated member; micaceous schist and phyllite with interlayers of metawacke.

- CZpv — Metabasalt and volcaniclastic (greenstone) unit.

Underhill Formation

CZun — Silvery-green albitic schist and phyllite; locally with interlayers of dolomite. quartzite, and metawacke.

- CZul — Quartz-laminated schist
- CZpll — Laminated magnetite schist
- CZung — Greenstone (mafic metavolcanic)

Explanation of Structural Symbols

- 12 — Trend and plunge of L2 crenulation lineation (Acadian); proxy for F2 fold axis.
- 18 — Trend and plunge of L1 stretching/ intersection lineation (Taconian); proxy for F1 fold axis.
- 60 — Strike and dip of S2 crenulation cleavage (Acadian); axial planar to open-tight, asymmetric, west-verging folds.
- 45 — Strike and dip of S1 spaced cleavage (Taconian); axial planar to reclined isoclinal folds that may be rootless/intrafolial.
- 25 — Strike and dip of bedding.

Explanation of Map Symbols

Outcrop Locations

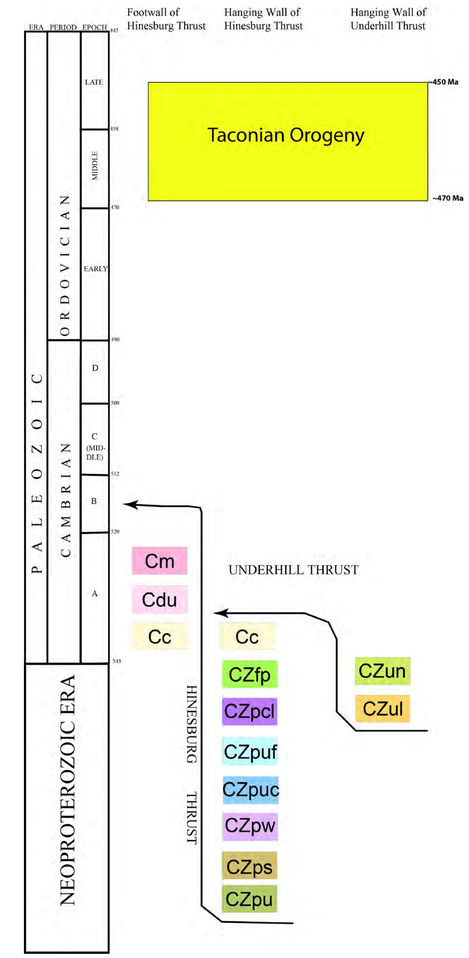
- Outcrops_This_Study
- Outcrops_Thompson (unpublished data)
- Outcrops_Dipietro (1983)
- Outcrops_Tauvers (1982)
- Outcrops_Smith (unpublished data)

Lithologic Contacts- Certainty

- known
- approximate
- inferred

Faults

- Thrust fault (teeth on hanging wall)
- D/U — Normal fault



Note: Although not shown on this diagram, the Devonian Acadian Orogeny, which formed the F2 folds and associated S2 cleavage, occurred during the ~390-360 Ma interval.

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Base map of the Bristol Quadrangle from U.S. Geological Survey.
Coordinate System: Vermont State Plane, meters, NAD 83.
Grid overlay on map is Universal Transverse Mercator,
Zone 18N, NAD 83.
Digital Cartography by Jonathan Kim
Date: April 2013

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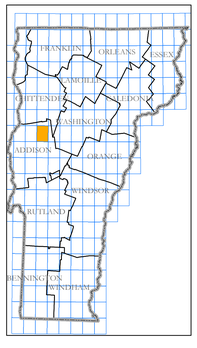

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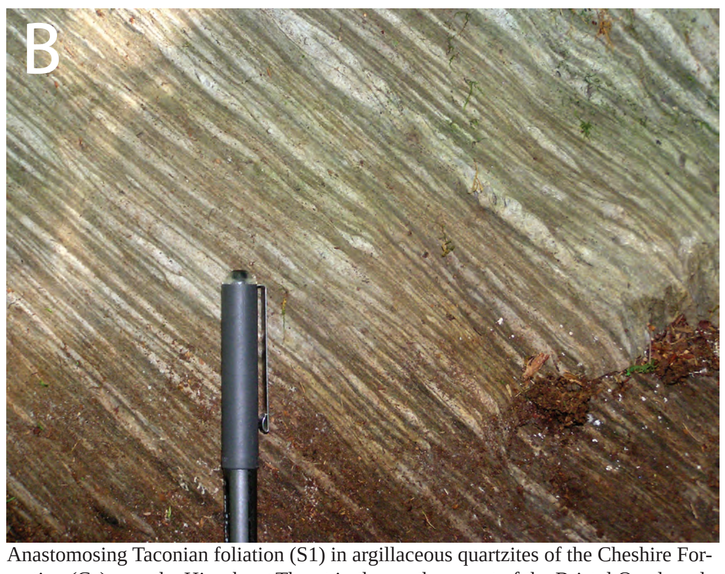
Plate 2- Representative Ductile Structures- Bristol Quadrangle

Taconian (Ordovician) reclined isoclinal F1 fold in the phyllitic quartzites of the Fairfield Pond Formation (CZfp).

Taconian (Ordovician) L1 intersection lineation that is colinear with F1fold axes in interlayered dolomitic marbles and phyllitic quartzites of the Forestdale member (CZpuf) of the Pinnacle Formation.

Taconian (Ordovician) L1 stretching lineations (parallel to pen) that are overprinted by Acadian (Devonian) L2 crenulation lineations (plunging gently to the left) in argillaceous quartzites of the Cheshire Formation (Cc).



Anastomosing Taconian foliation (S1) in argillaceous quartzites of the Cheshire Formation (Cc) near the Hinesburg Thrust in the southern part of the Bristol Quadrangle.

Tight Acadian (Devonian) F2 fold with an axial planar crenulation cleavage in the “pinstriped” metawackes of the Pinnacle Formation (CZpw).

Acadian (Devonian) S2 foliation (parallel to pen) that overprints the Taconian S1 foliation (oblique to pen) in quartzites of the Cheshire Formation (Cc).

Vestiges of Taconian F1 isoclinal folds (arrow) that are deformed by asymmetric west-verging open-tight F2 Acadian (Devonian) folds in interlayered dolomitic marbles and phyllitic quartzites of the Forestdale member (CZpuf) of the Pinnacle Formation.

Bedding-parallel asymmetric shear bands of uncertain age in massive quartzites of the Cheshire Formation (Cc). The preferred interpretation is that they were formed by flexural slip during F2 Acadian (Devonian) kilometer-scale folding Relative motion is top-to-the-left (west).

Tight Acadian (Devonian) F2 fold with an axial planar crenulation cleavage in massive metawackes of the Pinnacle Formation (CZpw).

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