Eastern Belt

Willows

Adapted from Ernst and McLaughlin, 2012
Yolla Bolly graywacke/argillite

1+

Valentine Spring
Semi-schistose graywacke & argilite

All units in Blueschist facies

SFMS, thin-bedded to laminated schistose sand and shale
Fault interpretation drivers:

Belief in Age difference between SFMS & Franciscan

Post-metamorphic differential uplift
<table>
<thead>
<tr>
<th>Arguments for faulting</th>
<th>Arguments against</th>
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<tbody>
<tr>
<td>Jump in metamorphic grade</td>
<td>“metamorphic temperature was not very different” across the Eastern belt</td>
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<td>Brocker and Day, 1995</td>
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<td>Sulfur Creek Fault and other YB faults</td>
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<td></td>
<td>“vertical component of post-metamorphic fault offset was small (&lt; few km), if any.”</td>
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<td>Cloos and Copeland, 2005</td>
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<tr>
<td>Change in lithology and structural fabric</td>
<td>Can be explained by accretionary processes</td>
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<tr>
<td>Jump in textural grade</td>
<td>Data not convincing</td>
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<td></td>
<td>Faults not seen in outcrop*</td>
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Grindstone Creek from Longpoint trail
Grindstone Creek
Subparallel faults spaced ~100 to 600 m apart

Change in lithology and structural fabric across faults
Across faults there is commonly:

- a change in structural fabric (e.g. strike of bedding)
- a change in lithology.
Sulfur Creek Fault

Valentine Spring

Yolla Bolly

not schistose

semischist

B

B'

NW

SE

0 500 1000 m

V = H

up direction determined from graded bedding
Textural Grades

1+

2

3
Valentine Spring

Grindstone Creek
Precurser: Mudstone and ....

- thin-bedded, very fine grained, very well-sorted sandstone
- thicker bedded, coarser, less well-sorted sandstone
Grindstone Creek area
Contacts between units are gradational

There is a lithologic difference that roughly corresponds to the transition from textural grade 3- to 2

Elsewhere in Eastern Belt
Gradational contacts...yes
Lithology similar.....no

Terminology???
The terms schist and semischist are useful and mappable

Origin of inverse metamorphic gradient?
No post-metamorphic differential uplift