

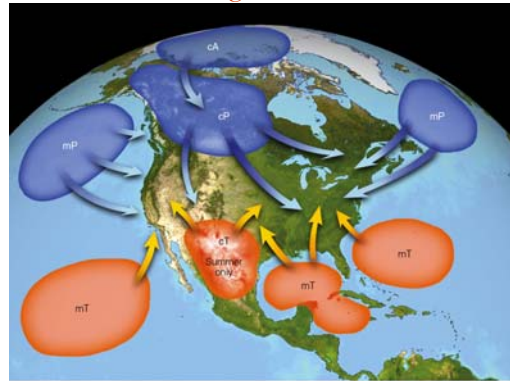
Air Masses, Fronts, and Mid-Latitude Cyclones



Dr. Christopher Godfrey
University of North Carolina at Asheville

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Air Mass Source Regions and Their Paths

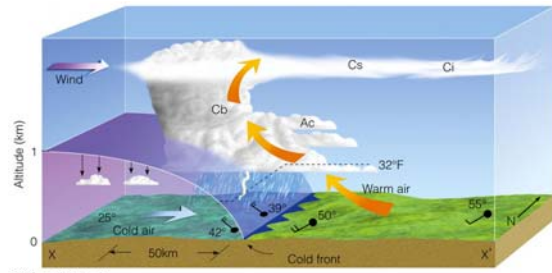


Cold Front



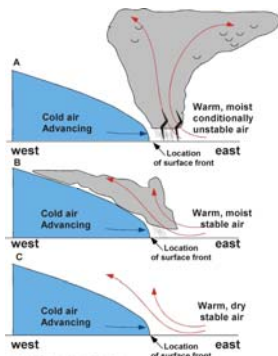
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Cold Front



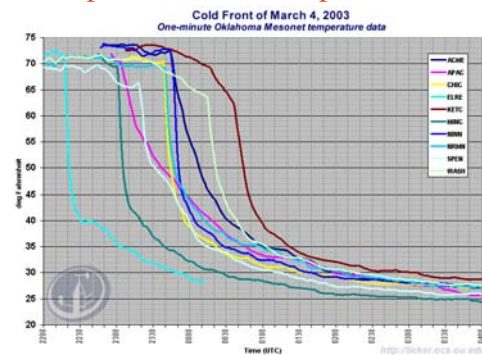
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Possible Conditions Near a Cold Front



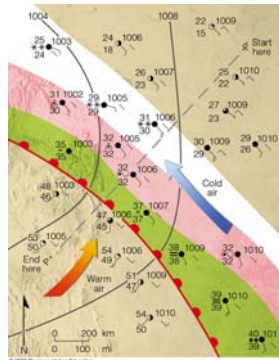
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Temperatures can drop fast!



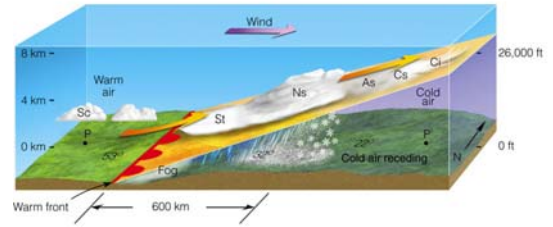
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Warm Front



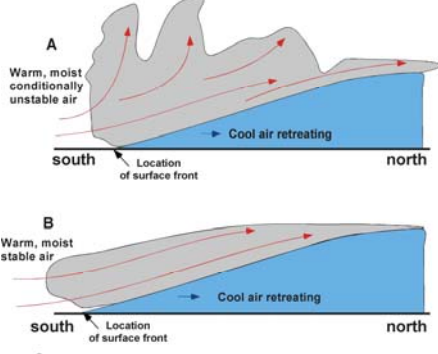
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Warm Front



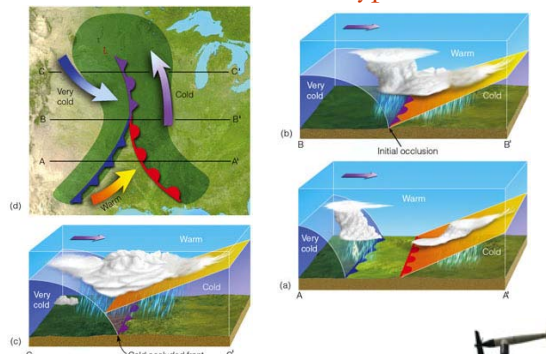
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Possible Conditions Near a Warm Front



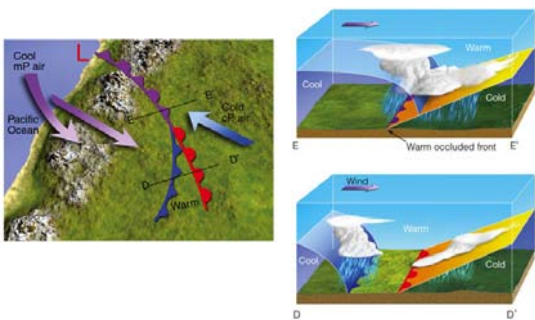
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Occluded Front – Cold Type



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Occluded Front – Warm Type



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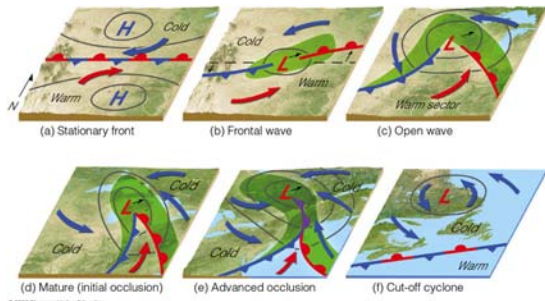
Cyclogenesis

Cyclogenesis: Development or strengthening of a mid-latitude cyclone

Cyclones form where there is a **contrast** between air masses (warm vs. cold)

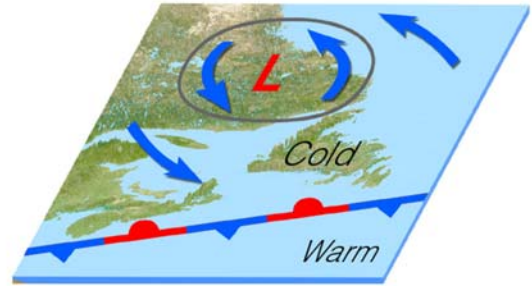
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Polar Front Theory



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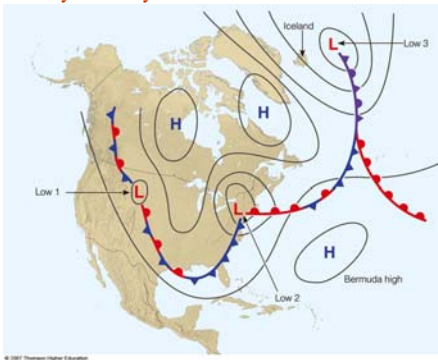
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(f) Cut-off cyclone

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Family of Cyclones



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Where Do Mid-Latitude Cyclones Tend to Form?



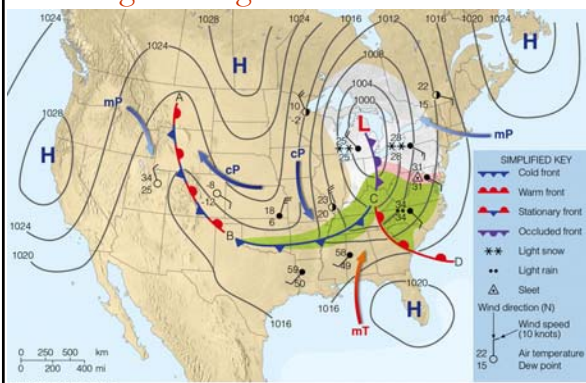
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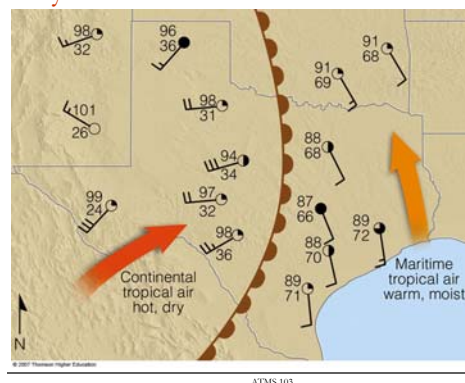
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Putting it all together...



0 250 500 km
 0 200 400 mi

Dryline



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