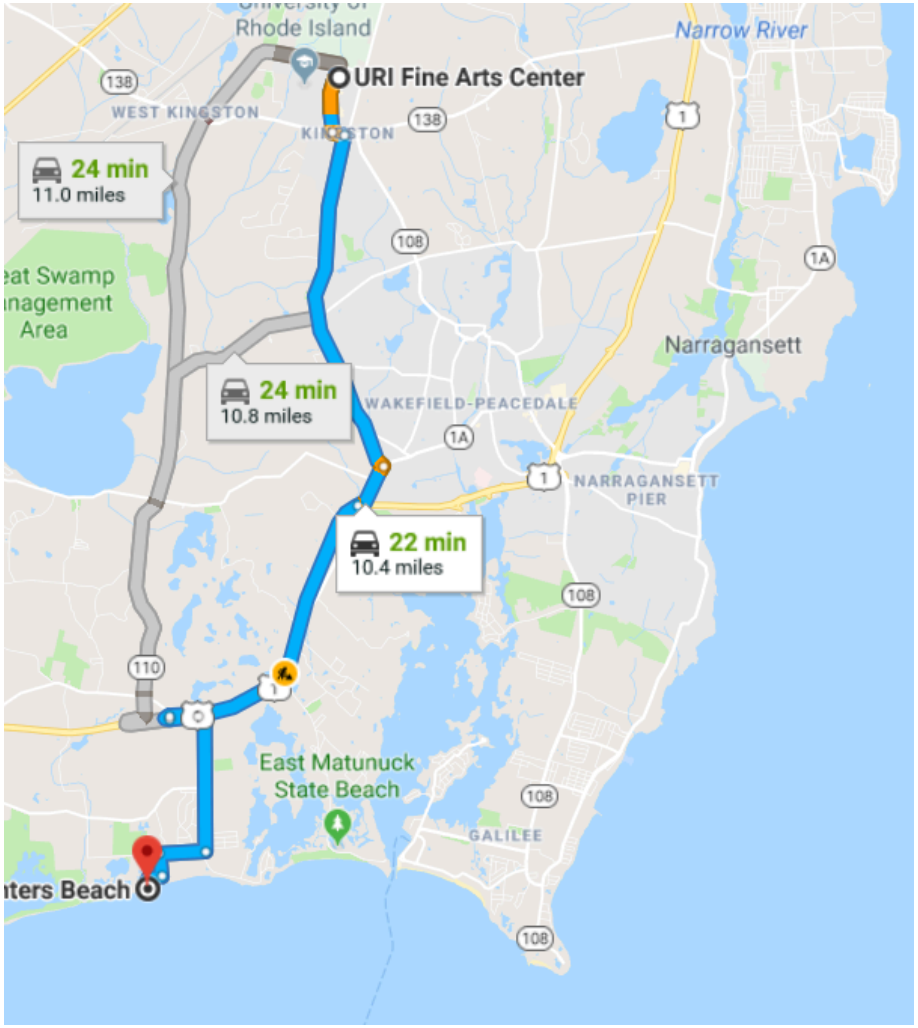
# OCG103g - Impact of Global Change on NE's Coastal Environment



Field Trip Review

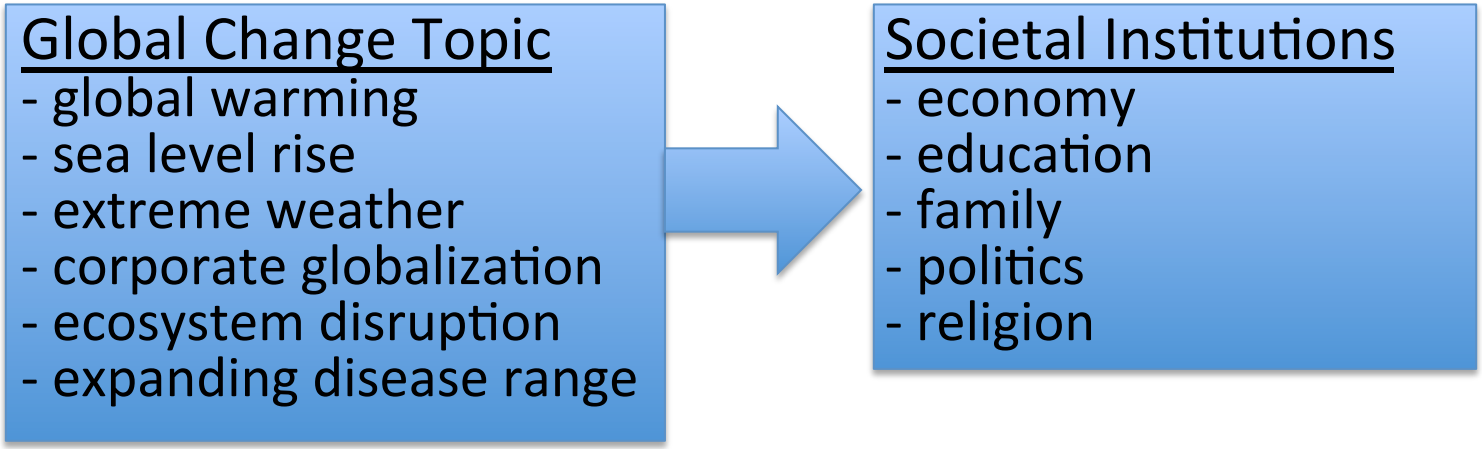
Group Projects



# Group Presentations



**Impact of Global Change on New England's Coastal Environment**




Demonstrates Critical Thinking

- 4-person groups (TBD)
- 2 minutes each (10 minutes total, 2 minutes fo questions)
- May 10th, 8-11 AM (during scheduled finals)

# Levels of Critical Thinking (Spectrum)



1) Uninformed
   - never heard of it before

2) Hear-Say
   - information from parents, friends, media?

3) Initial Fact Checking
   - check source of information without regard to quality of reference

4) Advanced Fact Checking
   - use high-quality references or collect data

5) Discrimination
   - able to ID good and bad arguments
   - see alternative interpretations

6) Critical Thinker
   - ID issue,
   - gathers relevant info,
   - reasoned interpretations
   - possible alternatives
   - communicate results

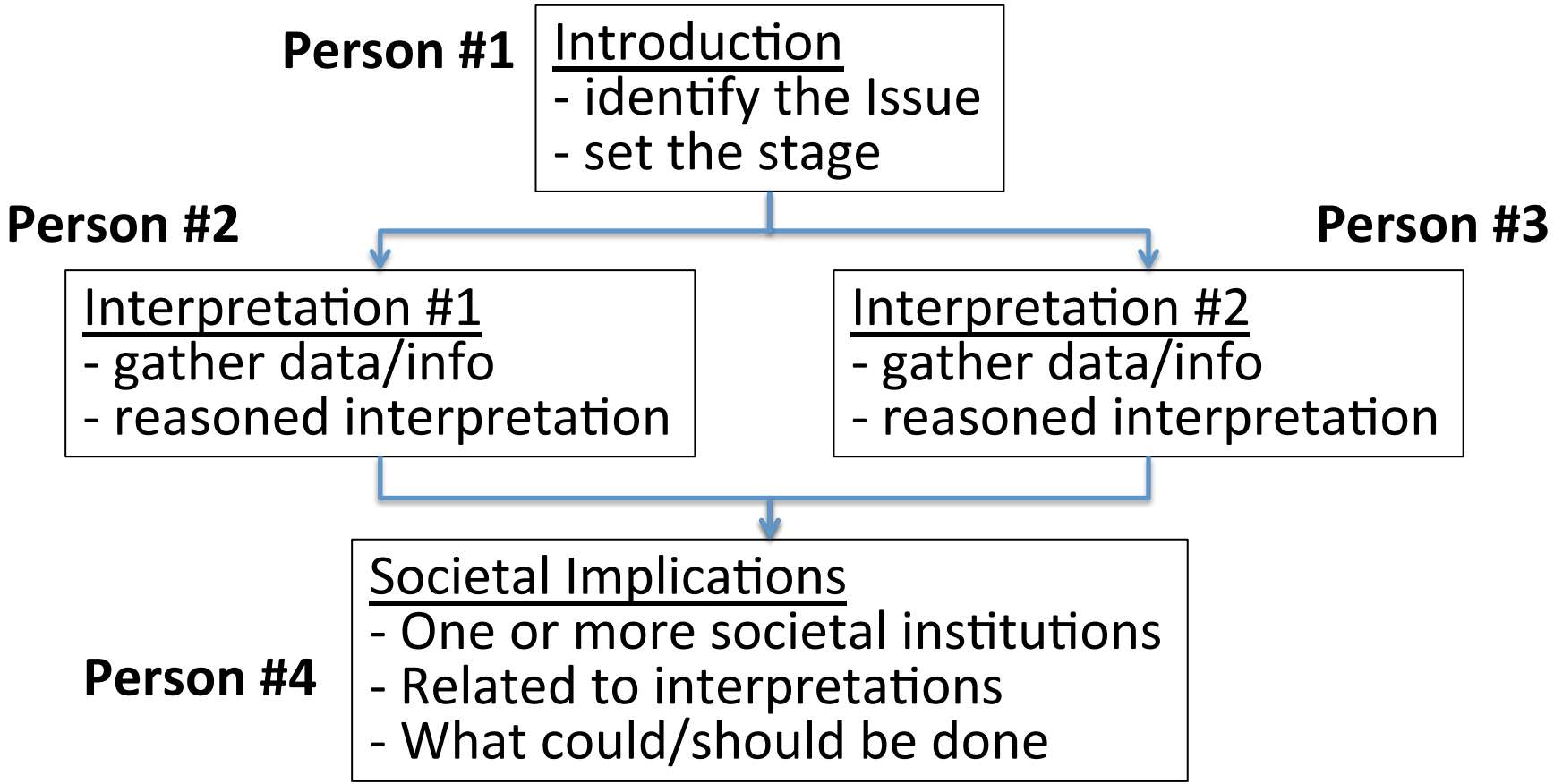
# Group Projects



6) Critical Thinker
- ID issue,
- gathers relevant info,
- reasoned interpretations
- possible alternatives
- communicate results

Accepter vs Deny-er

Accepter vs So-What-er



| Content | Did the presentation provide useful information?<br>Were appropriate graphics/data used and referenced? |
|---|---|
| 3 | Presentation had significant useful information and appropriate graphics/references. |
| 2 | Presentation had modest useful information and/or appropriate graphics/references. |
| 1 | Presentation was lacking in useful information and appropriate graphics/references. |

| Organization | Was the presentation well organized and easy to follow?<br>Were transitions and proposed format followed? |
|---|---|
| 3 | The presentation was well organized and followed proposed format |
| 2 | The presentation was sufficiently organized and somewhat followed the proposed format. |
| 1 | The presentation was poorly organized and did not follow the proposed format. |

| Discussion | How well did the group handle the questions and discussion period ? |
|---|---|
| 3 | The questions and discussion period were handled very well. |
| 2 | The questions and discussion period were handled adequately. |
| 1 | The questions and discussion period were handled “not so good.” |

| Collaboration | Did everyone contribute to the presentation?<br>Did everyone seem well versed in the material? |
|---|---|
| 3 | Everyone contributed and were knowledgeable of the material. |
| 2 | Only some of the group contributed and were knowledgeable of the material. |
| 1 | Group had poor coordination and lacked sufficient knowledge of the material. |

| Contribution | How much did each partner contribute to the group project | You _____ | Name _____ | Name _____ | Name _____ |
|---|---|---|---|---|---|
| 3 | Above Expectations – Did most of the work | | | | |
| 2 | Met Expectations – Did their fair share | | | | |
| 1 | Below Expectations - Slacker | | | | |

# Group Projects

## Story Board

| Introduction | Interpretation #1 | Interpretation #2 | Summary |
|---|---|---|---|
| ID Key Issue<br>Background Info<br>5 W's<br>Interpretations | Possible Option<br>Supporting Data<br>Interpretation<br>Strength/weakness | Possible Option<br>Supporting Data<br>Interpretation<br>Strength/weakness | Summarize Causes<br>Societal Implications<br>Mitigation Options<br>What to do? |

**Cause of Global Warming**

Temps rising
- where => globally
- when => since XXXX
- how much => X˚C
- why – GHG, sunspots

Interpretation
- not rising (faulty data)
- rising (natural)
- rising (GHG & man)

**Not Rising**
Supporting Data
- errors in data collection
- data fudging

**Rising & Natural**
Supporting Data
- correlation w/ natural cycles

**Rising & Human**
Supporting Data
- CO2 & Temp correlation

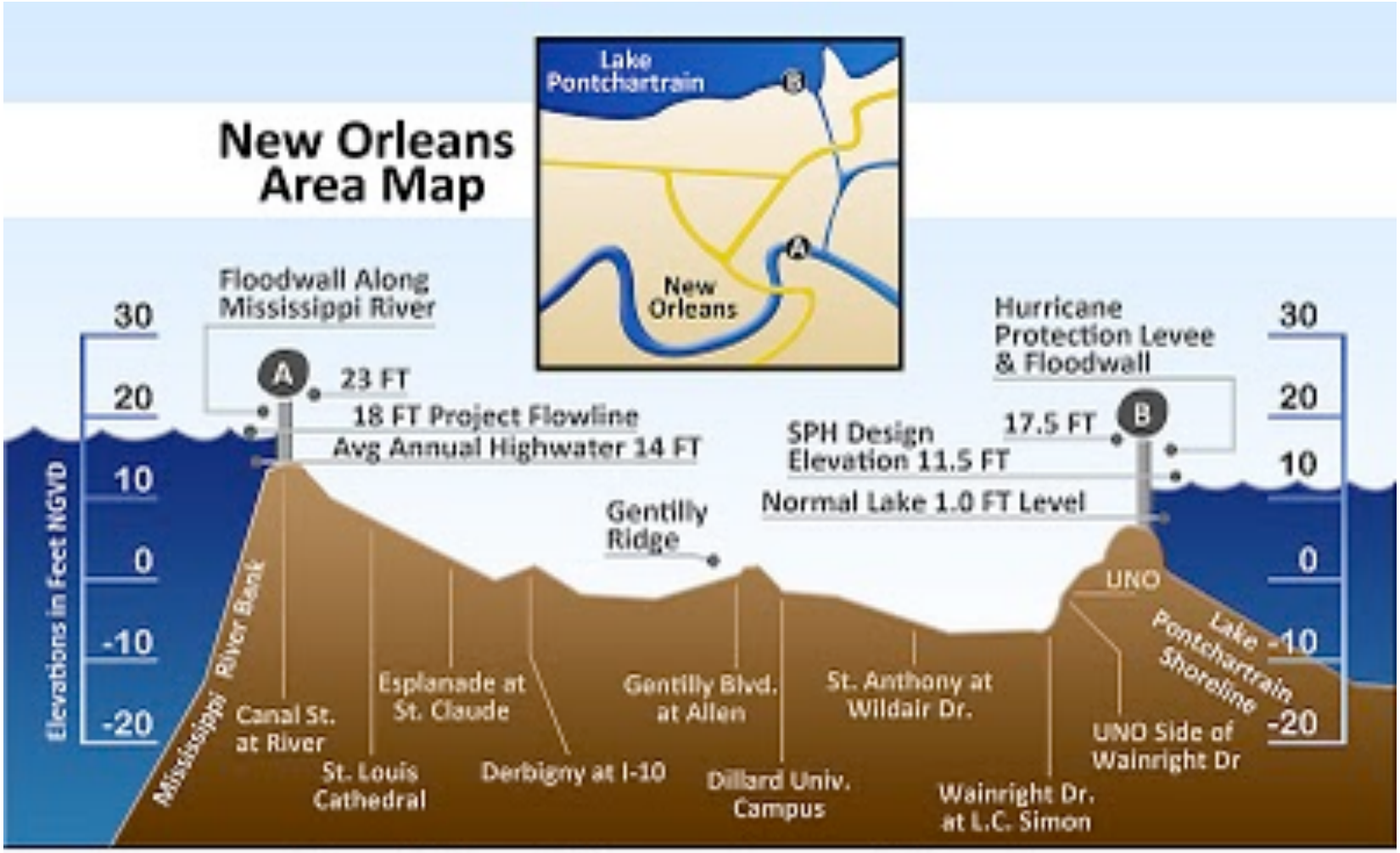
Summarize Arguments
- key parts of arguments
- select an interpretation

Societal Implications
- economic, political (people avoid him)

Mitigation Options
- curb fossil fuels ($$)
- green energies ($)

# City of New Orleans (Example)






**City of New Orleans Ground Elevations**

From Canal St. at the Mississippi River to the Lakefront at U.N.O.

# Group Projects



## Story Board – New Orleans

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| --- | --- | --- | --- |
| ID Key Issue<br>Background Info<br>5 W's<br>Interpretations | Possible Option<br>Supporting Data<br>Interpretation<br>Caveats? | Possible Option<br>Supporting Data<br>Interpretation<br>Caveats? | Summarize Causes<br>Societal Implications<br>Mitigation Options<br>What to do? |

# Mountain Pine Beetle Infestations

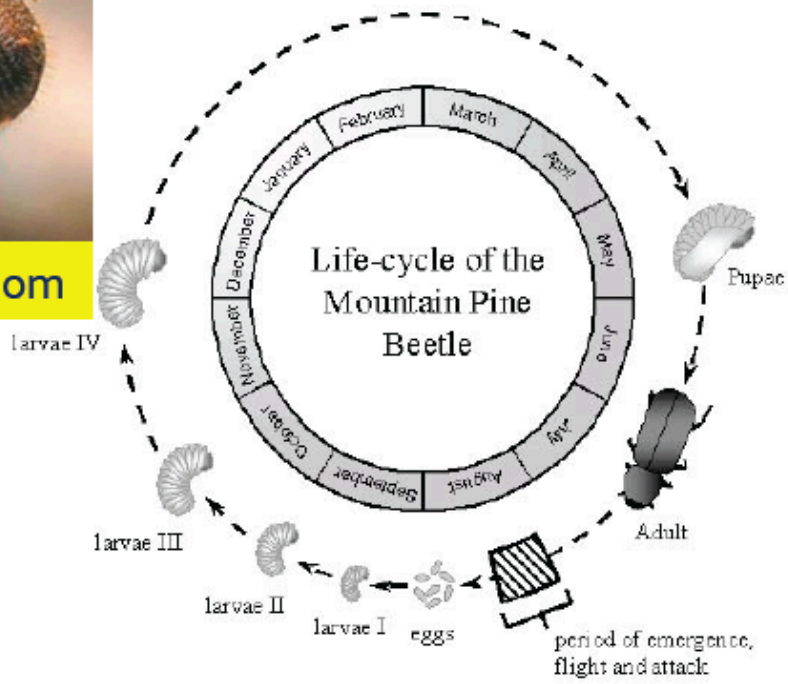
GCH103 Final Project

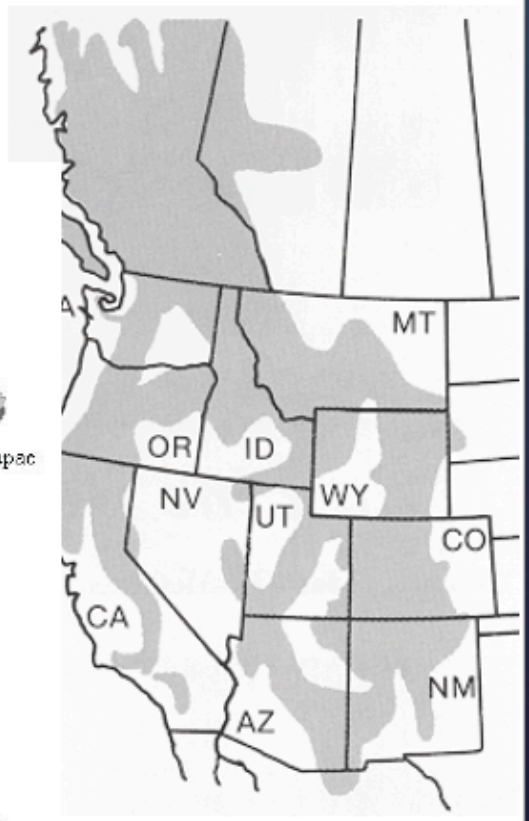
Robert A. Pockalny

# IDENTIFY THE ISSUE

## Mountain Pine Beetle - Overview

- What are mountain pine beetles?

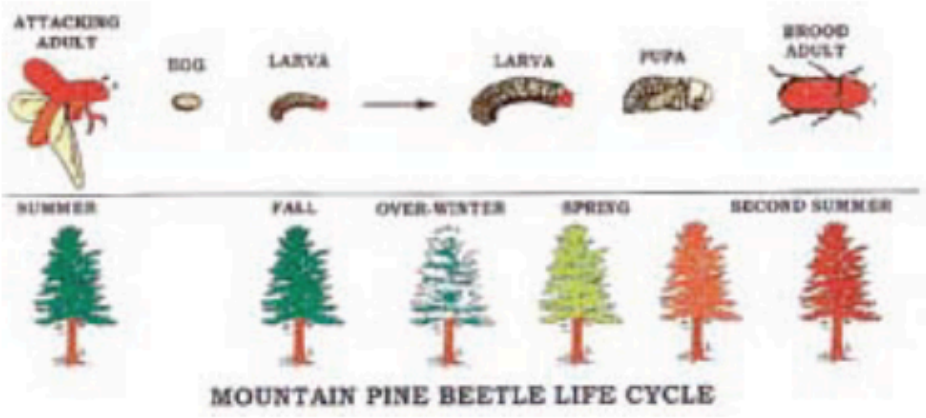



# Mountain Pine Beetle - Overview

- What are mountain pine beetles?
- What damage do they do?

Lodgepole Pine
Ponderosa Pine



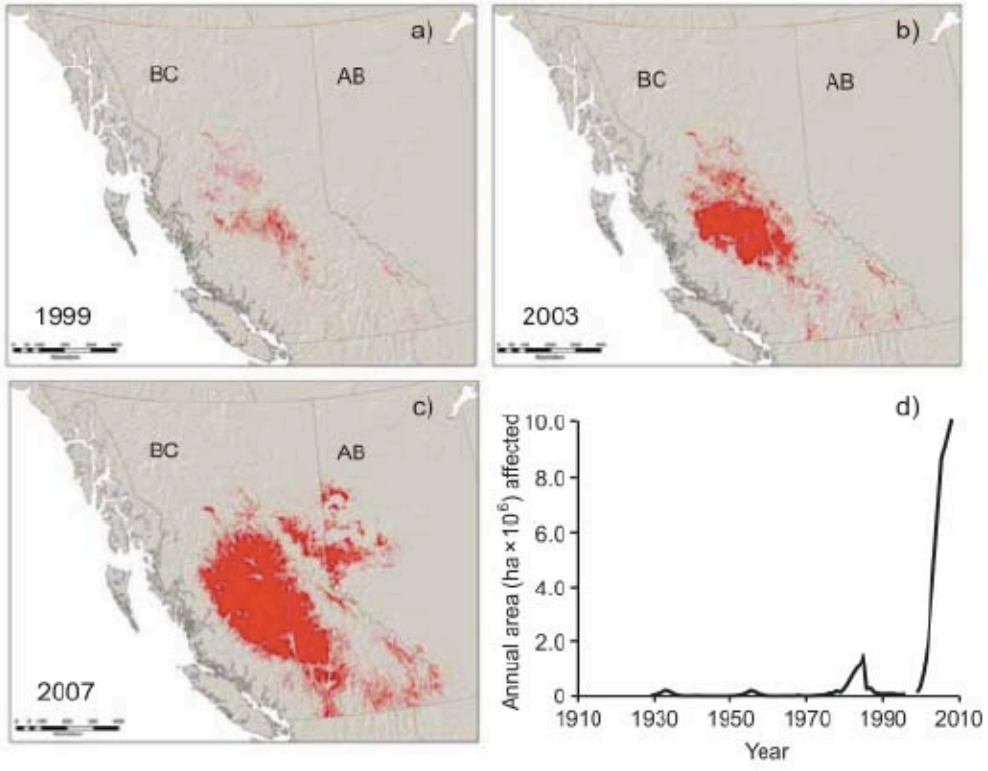

americantreecolorado.com

www.co.yellowstone.mt.gov

# Mountain Pine Beetle - Overview

- What are mountain pine beetles?
- What damage do they do?
- Extent of infestation.

Safranyik, et al, 2010
The Canadian Entomologist

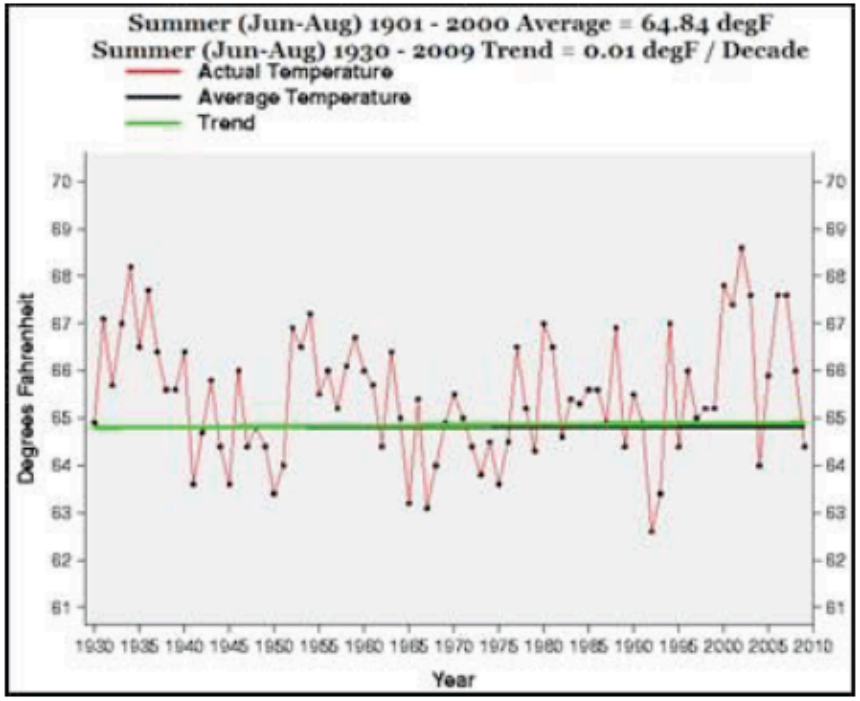


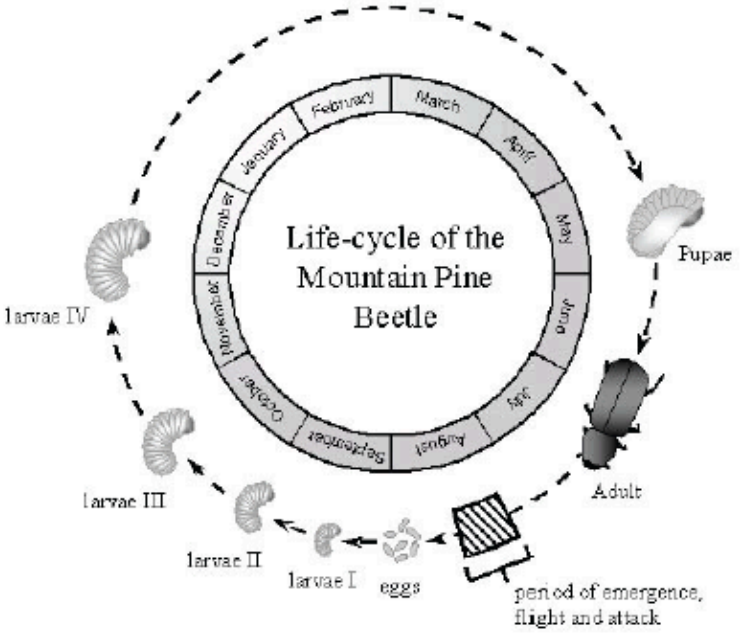

# MPB Infestation Expansion - Causes

- Potential Causes & Supporting Information
  - Climate Change => multiple life cycles, extended range
  - Natural variability & cycles (e.g., Cicadas)
  - Forest Service Protocols (e.g., controlling forest fires)

# INTERPRETATION #1
# MPB Infestation Expansion - Climate

- Longer Summers => multiple life cycles, extended emergence
- Warmer Winters => greater survival, extended range (vert. & North)
- Low Precipitation => trees more susceptible



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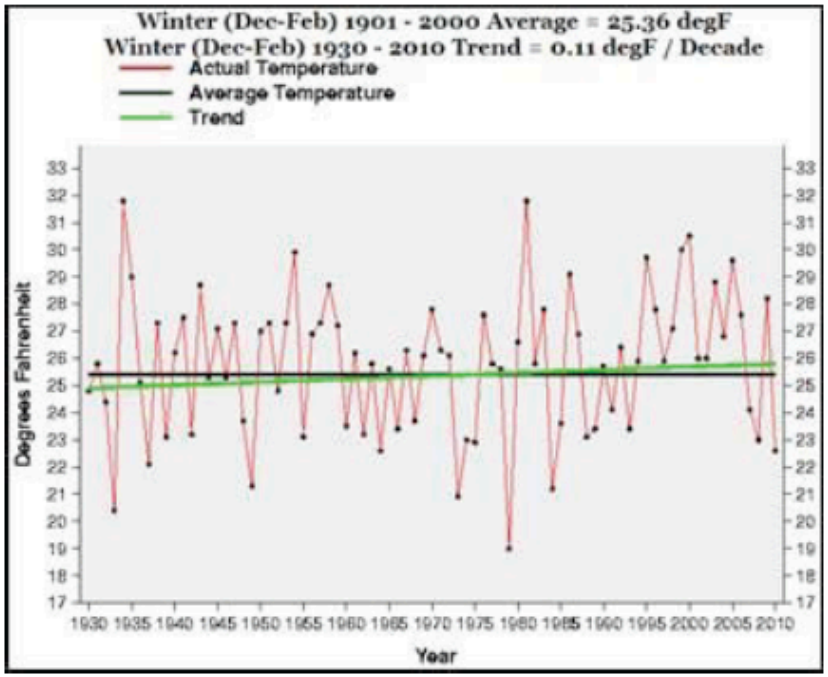


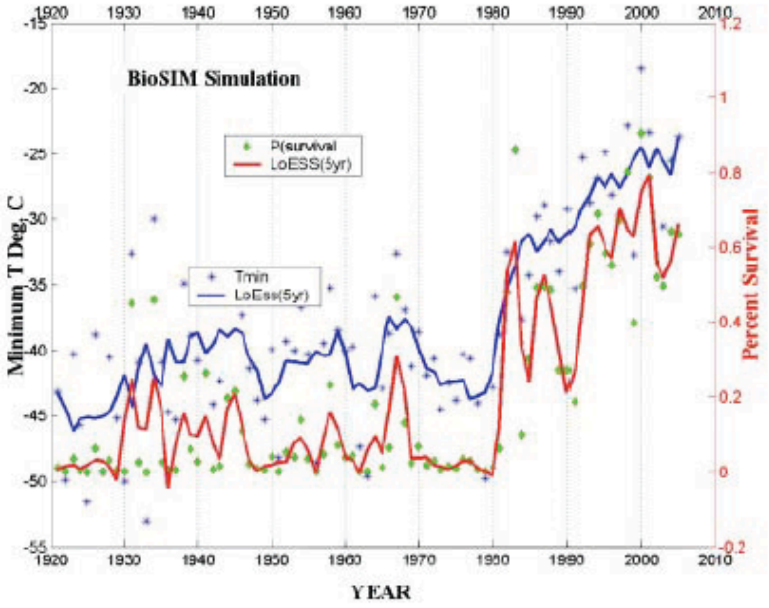

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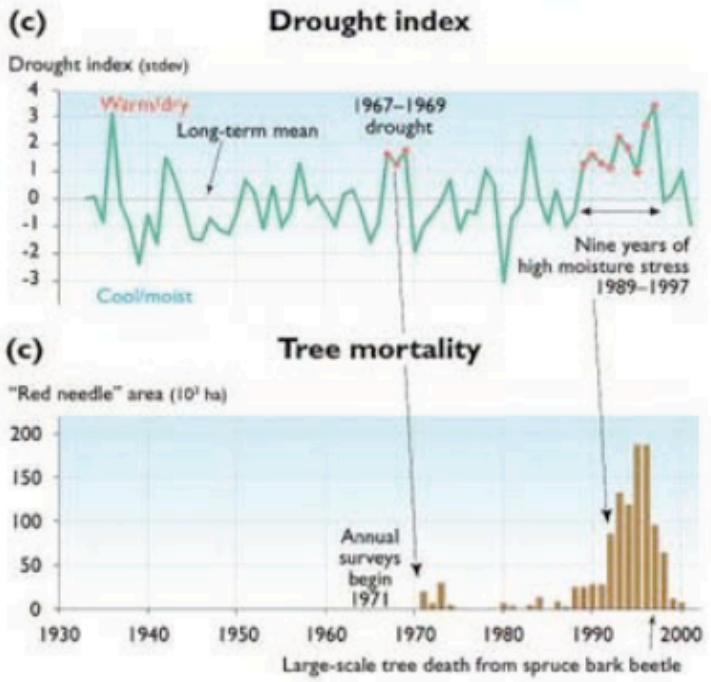
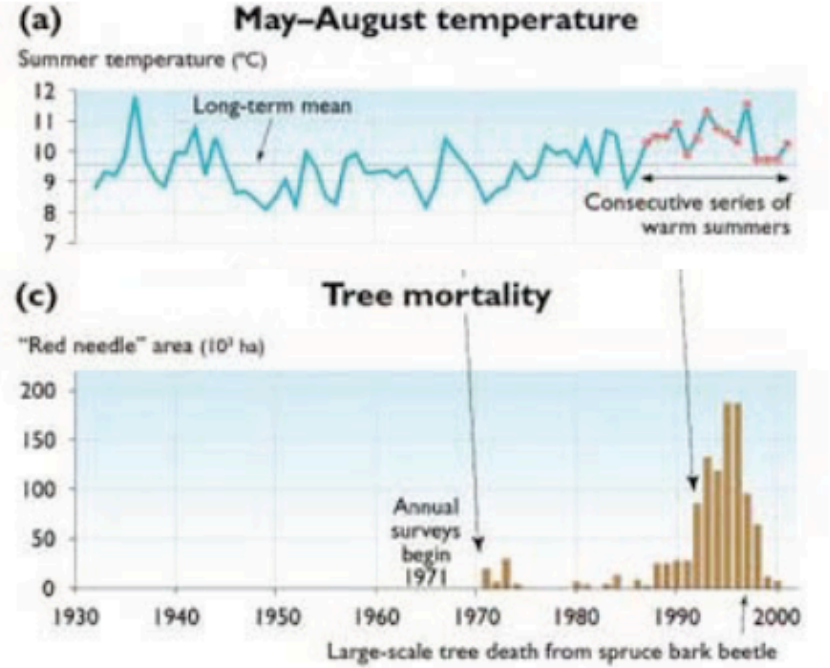


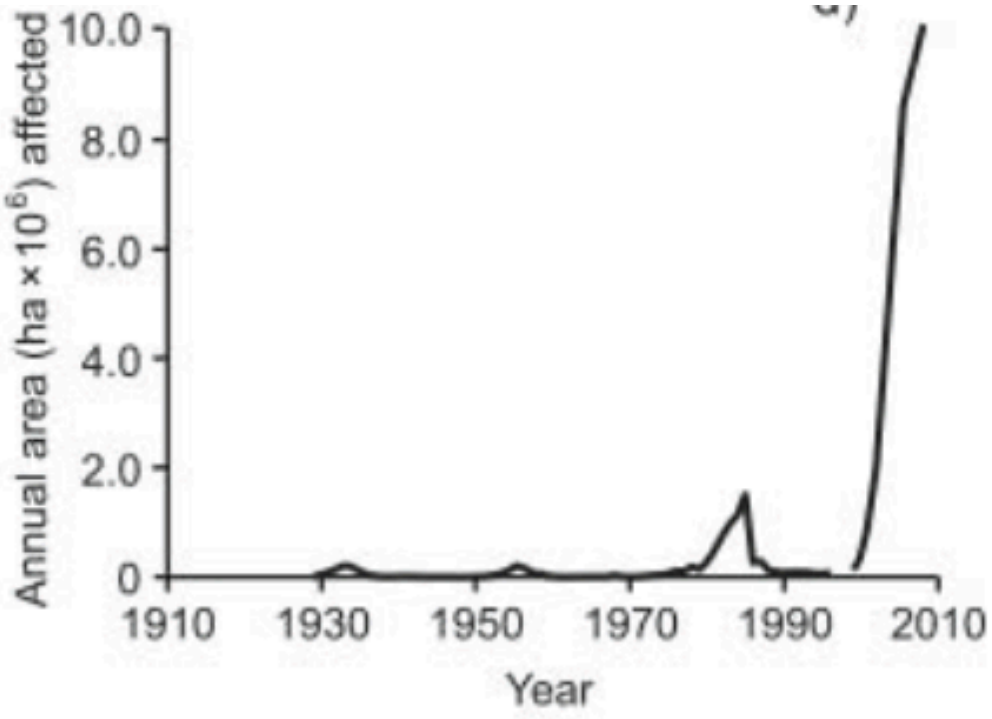



# INTERPRETATION #2

## MPB Infestation Expansion – Natural Cycles

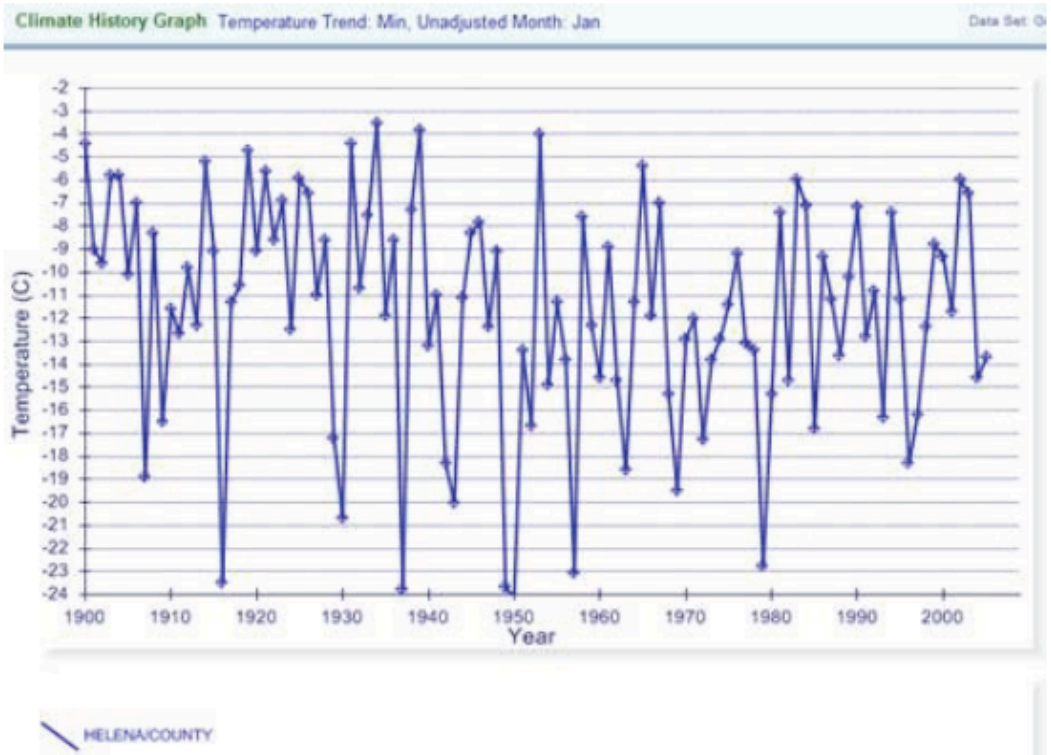
Infestations every 20 years (e.g., Cicadas, 17 years)

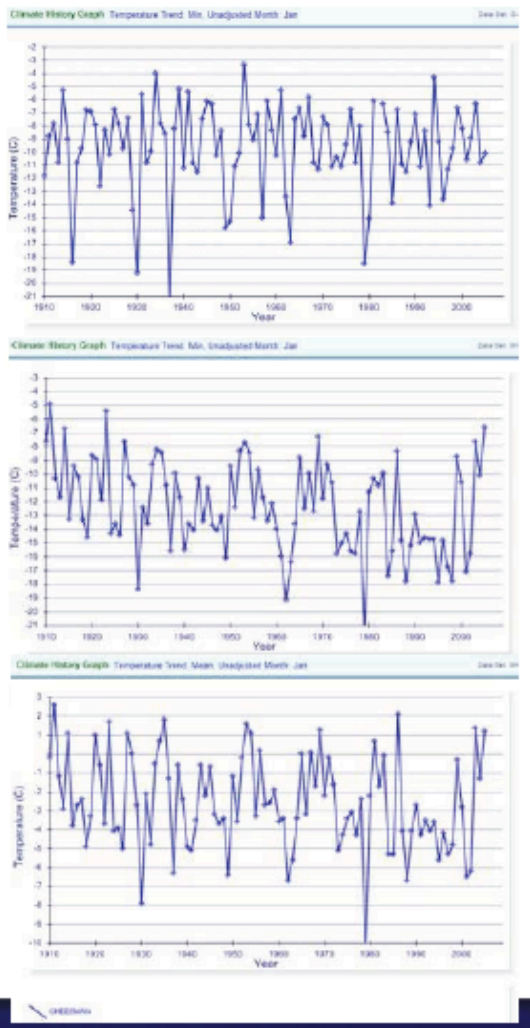
Recent increase in affected areas is an artifact of better observation tools



# MPB Infestation Expansion – Natural Cycles

Winters are actually getting colder



# INTERPRETATION #3

## MPB Infestation Expansion – Forest Service

- Forest Fire Abatement
  - More trees preserved
    - Closer spacing => easier for beetles to reach new hosts
    - Older trees => older trees more susceptible

# SOCIETAL IMPLICATIONS

## Mountain Pine Beetle – Implications

Economic Impacts

- Loss of Timber
  - U.S. Forest Service committed $40 million for cleanup efforts in 2009
  - Cost an estimated 11,000 jobs in Canada over the next 14 years.
- Fire Hazard
- Loss of Tourism

# Mountain Pine Beetle – Implications

What Could/Should be Done ?

- If Global Warming
  - Treat Forests – costly, but provides jobs
  - Not sure if reducing atmospheric CO2 will help
  - Positive Feedback of dying trees
- If Natural Cycle
  - Wait for nature to take its course
  - Not worth spending money to treat forests
  - No need to change our habits
- If Forest Service Practices
  - Change forestry practices
  - Wait to see if it is a climate issue

# Group Presentations



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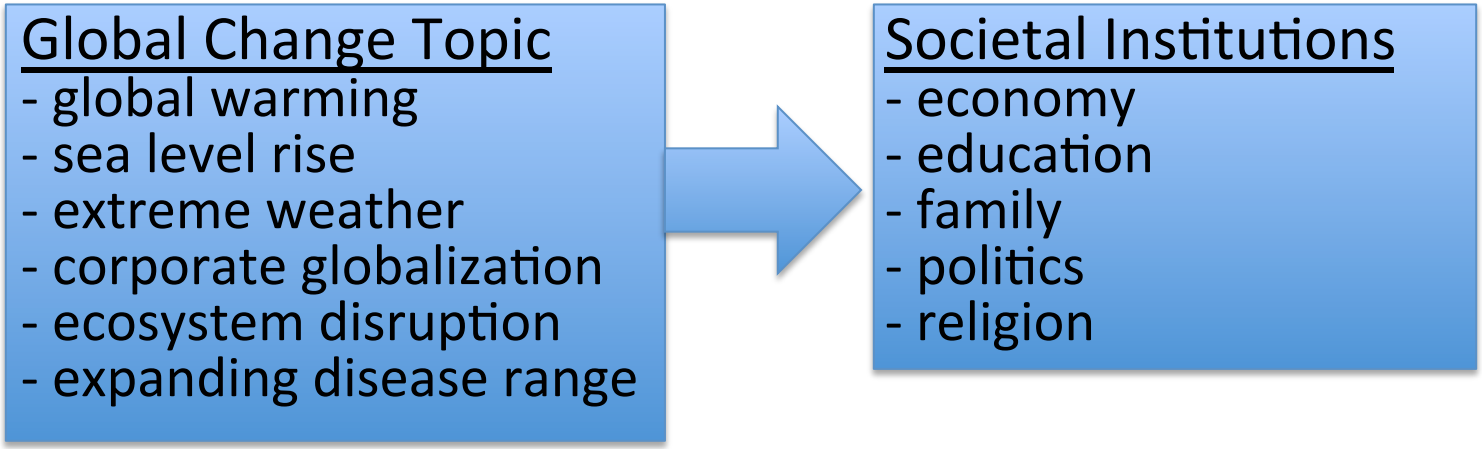


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