

Preparing for the Next Spruce Budworm Outbreak



Maine Project Learning Tree

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Spruce Budworm: Resources

A. What Values do we place on the Maine Forest?

PLT Focus on Forests. Tough Choices. Pages 77-86.

B. What is Spruce Budworm?

Spruce Budworm in Maine:

http://www.maine.gov/dacf/mfs/forest_health/insects/spruce_budworm_2014.htm

Spruce Budworm Life Cycle

<https://umainetoday.umaine.edu/archives/fallwinter-2015/outbreak-in-the-north-woods/spruce-budworm-life-cycle/>

Life history and habits of SBW. Natural controls and IPM measures that can be used to control SBW populations.

Spruce Budworm in the Eastern United States

<http://na.fs.fed.us/spfo/pubs/fidls/sbw/budworm.htm>

C. The Response to the 1975 Outbreak of SBW:

Spruce Budworm News Clips 1975 and 1976

<https://youtu.be/LRW9O-abhLY>

Lessons Learned: Memories of the Maine budworm infestation, 1970s-1980s

<https://youtu.be/L9SuYx1m9Nw>

<http://umainetoday.umaine.edu/archives/fallwinter-2015/outbreak-in-the-north-woods/>

An article about the historic past of SBW infestation in Maine.

The Spruce Budworm Outbreak in Maine in the 1970's – Assessment and Directions for the Future. ISSN 0734-9556

<http://maineforest.org/wp-content/uploads/2013/07/The-Spruce-Budworm-Outbreak-in-Maine-in-the-1970s.pdf>

Maine PLT Website – Spruce Budworm Newspaper Articles from the 1970's

(please post articles to ME-PLT website)

D. Looking Ahead to the Next SBW Outbreak:

Coming Spruce Budworm Outbreak: Initial Risk Assessment and Preparation & Response Recommendations For Maine's Forestry Community

<http://crsf.umaine.edu/files/2014/11/Maine-SBW-Assessment-Preparation-and-Response-Plan-DRAFT-FOR-PUBLIC-REVIEW-11-9-2014.pdf>

How will Maine respond to the next spruce budworm outbreak?

<http://www.sierraclub.org/maine/blog/2015/02/how-will-maine-respond-next-spruce-budworm-outbreak>

'It' s coming' : Maine readies for new battle with spruce budworm

<http://bangordailynews.com/2015/12/10/outdoors/its-coming-maine-readies-for-new-battle-with-spruce-budworm/>

SBW Tracker: <http://budwormtracker.ca/#/>

Healthy Forest Partnership: Protecting our Forests

<http://www.healthyforestpartnership.ca/en/>

Current research and practices in the monitoring and control treatments for SBW are explained. Up to date SBW maps and a research blog are also provided.

Outbreak in the North Woods

<https://umainetoday.umaine.edu/archives/fallwinter-2015/outbreak-in-the-north-woods/spruce-budworm/>

Interview with forester Bob Wagner about the scope of a SBW Outbreak, past and present.

A. What Values do we Place on the Maine Forest?

Working individually or in small groups, brainstorm a list of examples for each of the values listed below as they relate to the Maine forest.

Remember to list examples from different sectors of the population. You should honor different perspectives from different individuals and/or interest groups.

VALUES	EXAMPLES from the Maine Forest
Aesthetics beauty and appearance	
Environmental protection of natural resources	
Economic gain or loss of money or jobs	
Recreational leisure time activities	
Science knowledge gained by scientific research	
Social & Cultural maintaining human communities and respecting their values and traditions	
Ethical & Moral what is right or wrong	
Health maintaining human health & prevention of sickness or disability	

Educational accumulation and use of knowledge	
Personal Rights individual freedoms	

B. What is Spruce Budworm?

Peruse the literature provided below and any other resources to learn about spruce budworm.
Fill in the chart: *Getting to Know the Spruce Budworm*.

Spruce Budworm in Maine:

http://www.maine.gov/dacf/mfs/forest_health/insects/spruce_budworm_2014.htm

Spruce Budworm Life Cycle

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Life history and habits of SBW. Natural controls and IPM measures that can be used to control SBW populations.

Spruce Budworm in the Eastern United States

<http://na.fs.fed.us/spfo/pubs/fidls/sbw/budworm.htm>

Getting to Know the Spruce Budworm:

TOPIC	EXPLANATIONS
Native or Non-Native	
Host Species	
Life Cycle	
Geographic Range	

Last SBW Outbreak in Maine and severity of damage	
Current Status of SBW population	
Outbreaks occur every ____	
SBW Mobility	
Natural Predators	
Human control measures	
Other:	

C. The Response to the 1975 Outbreak of SBW:

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Spruce Budworm newspaper articles found on the Maine PLT website. (please post articles to ME-PLT website)
<http://www.mainetreefoundation.org/programs/plt-index.html>

STAKEHOLDER GROUP	RESPONSE to SBW OUTBREAK
Maine Forest Service	
Industry	
Private Landowners	
Public	
Others	

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D. Looking Ahead to the Next SBW Outbreak:

“Know how both the insect and the forest will respond to management, play the long-term and short-term hand that's dealt with both the axe and pesticide with thought and skill, and trust that the natural forest ecosystem is our friend.” (D.G. Mott, 1979)

Compare the key factors and conditions that exist today with the conditions and circumstances that existed in 1970. Focus your attention on how the next SBW outbreak will differ from past experiences.

Primary Resource:

Coming Spruce Budworm Outbreak: Initial Risk Assessment and Preparation & Response Recommendations For Maine's Forestry Community
<http://crsf.umaine.edu/files/2014/11/Maine-SBW-Assessment-Preparation-and-Response-Plan-DRAFT-FOR-PUBLIC-REVIEW-11-9-2014.pdf>

Supplemental Resources:

How will Maine respond to the next spruce budworm outbreak?

<http://www.sierraclub.org/maine/blog/2015/02/how-will-maine-respond-next-spruce-budworm-outbreak>

‘It’ s coming’ : Maine readies for new battle with spruce budworm

<http://bangordailynews.com/2015/12/10/outdoors/its-coming-maine-readies-for-new-battle-with-spruce-budworm/>

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Interview with forester Bob Wagner about the scope of a SBW Outbreak, past and present.

D. How will key factors and conditions affecting the current SBW outbreak compare to the conditions present during the outbreak from the 1970's and 1980's?

Factors / Condition	1970's	Today	Relative Difference today vs. 1970's (+) Better (-) Worse (=) Same (?) Unknown
Spruce-Fir Forest Conditions			
Wood Supply			
Forest Management			
Forest Products			

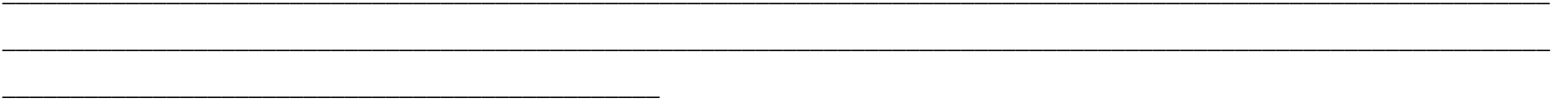
Manufacturing			
Mill Capacity Sawlogs Pulp & Paper Biomass			
Market Demands Sawlogs Pulp & Paper Biomass			
Monitoring Capacity			
Protection Measures Chemical Controls Application Technology Costs Strategies			
Policy & Regulations			
State Level Funding			

Spruce Budworm STUDENT PAGE

Name _____

1. What values about the Maine forest are most important to you? Why?

2. Why is spruce budworm a major concern in Maine and Canada?
3. Why do large SBW outbreaks occur every 30 to 60 years?
4. Based on your personal values about the Maine forest, what SBW management practices would you find most favorable? Explain.
5. Do you think there is conflict among stakeholder groups in how to control SBW? Explain.
6. What were the attitudes of the public during the salvage and pesticide spraying practices used in the 1970's?
7. What are Integrated Management Practices (IMPs)?
8. How will the next response to a SBW outbreak differ from that of the 1970's?



Maine's Forests – Perhaps the Right Time to Die?

Yankee, 1980

Coding / Comprehension Monitoring

Description:

Coding is a literacy strategy that helps students engage with their reading and reading comprehension. Coding helps students interact with their reading and give learning a purpose.

Directions:

2. Students are provided a copy of the article, *Maine's Forests – Perhaps the Right Time to Die?* Students are also provided a copy of the student handout and a coding bookmark.
3. While reading the article, students will copy or paraphrase information that they find interesting. Students post their selection on the students handout in the section, “What speaks to you?” The student also records the page and location of their selection and then “codes” the passage with a symbol(s) found on their bookmark.
4. The student then responds to their post with an “Add One”. “Add One” is a personal response in the form of a comment, an expression of emotion, a follow up question, or a sketch, drawing, or picture. It is totally up to the student to respond in their own style.
5. a) Collect student pages for assessment.
b) Use the students pages to help facilitate a classroom discussion about the reading assignment.

Extensions:

- 6. Have students compare and discuss how they coded sections of the text.
- 7. After students are comfortable with codes provided by the teacher, encourage them to develop additional codes appropriate for other reading assignments.

Reading/Coding Guide
Student Handout

Name _____

Maine's Forests – Perhaps the Right Time to Die?
Yankee, 1980

Page	Code	What speaks to you?

Add One: Personal comment, your emotions, ask a question, or sketch a picture...

Page	Code	What speaks to you?

Add One: Personal comment, your emotions, ask a question, or sketch a picture...

Page	Code	What speaks to you?

Add One: Personal comment, your emotions, ask a question, or sketch a picture...

Page	Code	What speaks to you?

Add One: Personal comment, your emotions, ask a question, or sketch a picture...

Maine's Forests – Perhaps the Right Time to Die?

Page	Code	What speaks to you?

Add One: Personal comment, your emotions, ask a question, or sketch a picture...

Page	Code	What speaks to you?

Add One: Personal comment, your emotions, ask a question, or sketch a picture...

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PERHAPS THE RIGHT
TIME TO DIE?

PERHAPS THE RIGHT
TIME TO DIE?

PERHAPS THE RIGHT
TIME TO DIE?

PERHAPS THE RIGHT
TIME TO DIE?

PERHAPS THE RIGHT
TIME TO DIE?

YANKEE 1980

YANKEE 1980

YANKEE 1980

YANKEE 1980

YANKEE 1980

CODING OPTIONS

CODING OPTIONS

CODING OPTIONS

CODING OPTIONS

CODING OPTIONS

Ec	Economics
Env	Environment
Soc	Society
Sy	Systems

Ec	Economics
Env	Environment
Soc	Society
Sy	Systems

Ec	Economics
Env	Environment
Soc	Society
Sy	Systems

Ec	Economics
Env	Environment
Soc	Society
Sy	Systems

Ec	Economics
Env	Environment
Soc	Society
Sy	Systems

Prob	Problem
Sol	Solution

Prob	Problem
Sol	Solution

Prob	Problem
Sol	Solution

Prob	Problem
Sol	Solution

Prob	Problem
Sol	Solution

“Add One”

“Add One”

“Add One”

“Add One”

“Add One”

Personal Reflection
What I am Thinking
Ask a Question
Doodle or Sketch

Personal Reflection
What I am Thinking
Ask a Question
Doodle or Sketch

Personal Reflection
What I am Thinking
Ask a Question
Doodle or Sketch

Personal Reflection
What I am Thinking
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