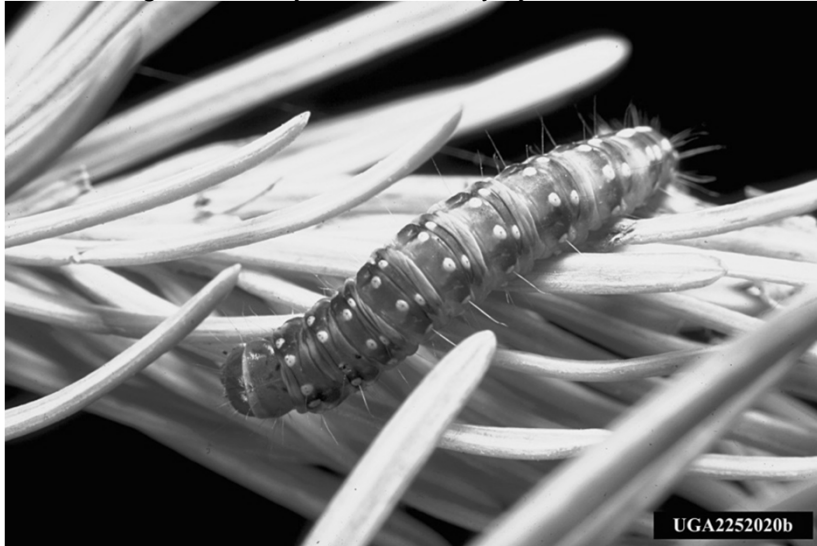
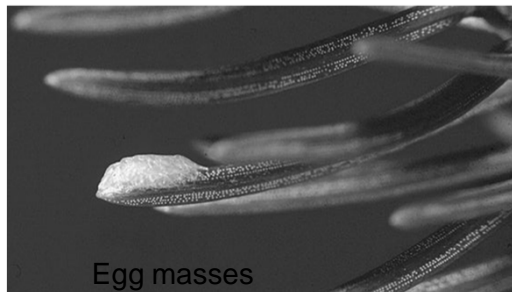
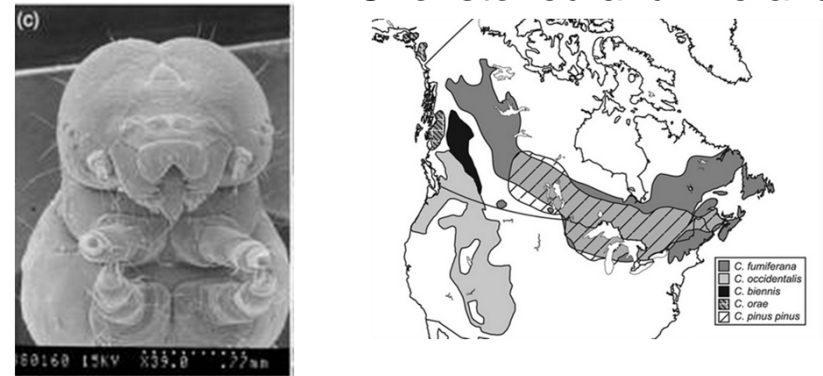


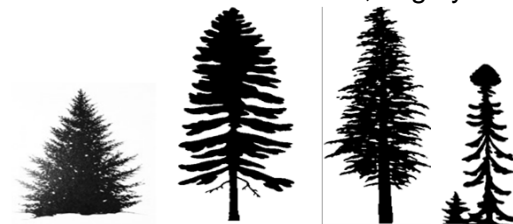
Larva emerge June-July, evolutionarily synced with Fir budbreak



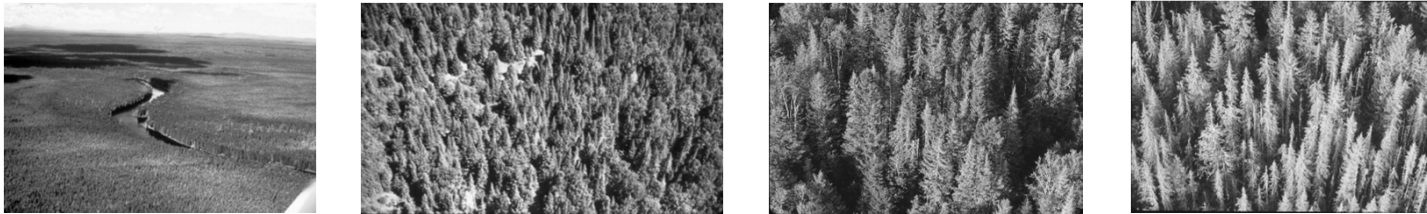
Choristoneura fumiferana



Food Preferences: BF>WS>RS>BS, largely due to phenology

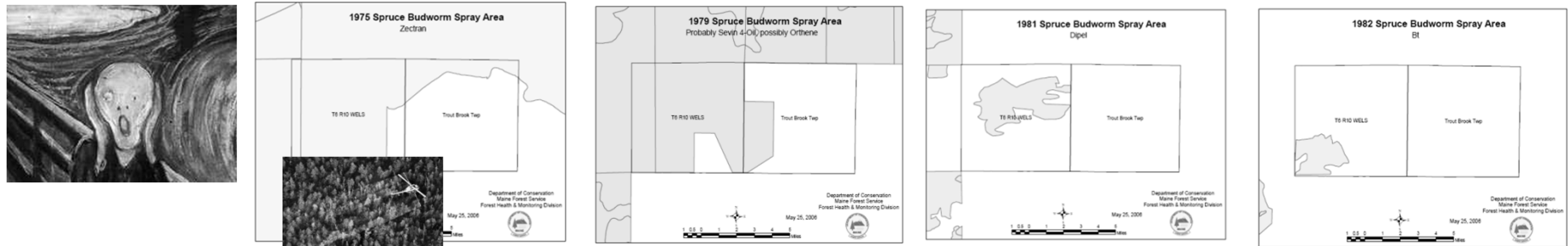


The woods



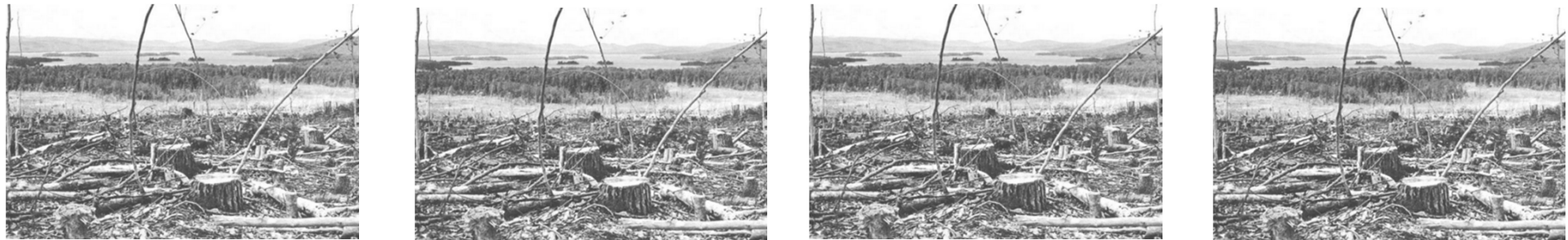
Defoliation begins-----mortality of fir after 7-8 years-----mortality of spruce after 10-12 years

The forestry community



Pretty much panic-----research-----sharpen tools, develop tactics-----target spray and fir-only cutting

Then of course many just continued to panic and allowed themselves to rationalize really efficient silviculture into the late 80s

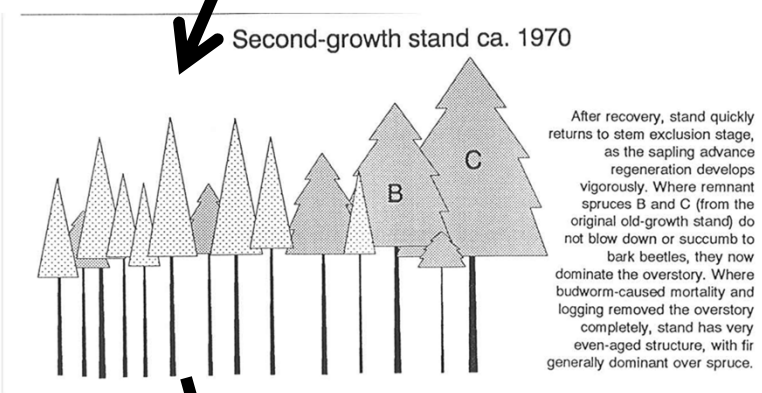
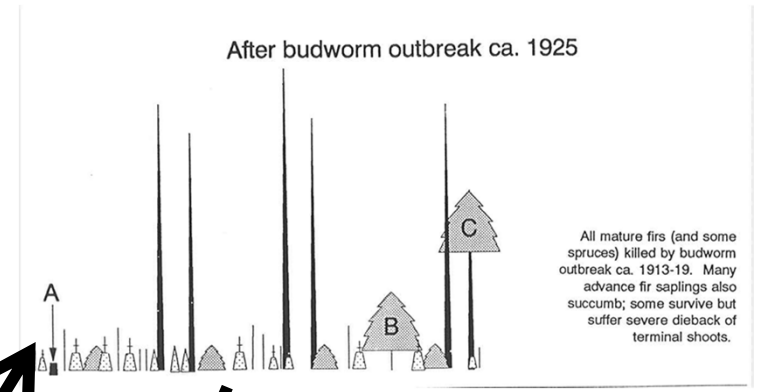
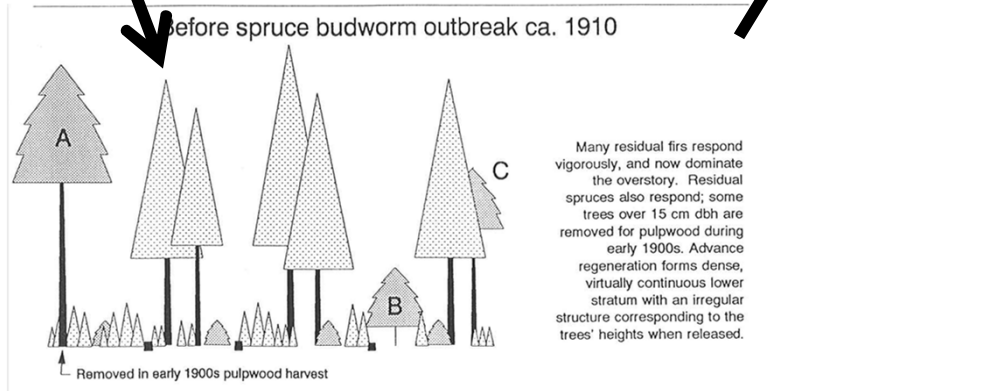
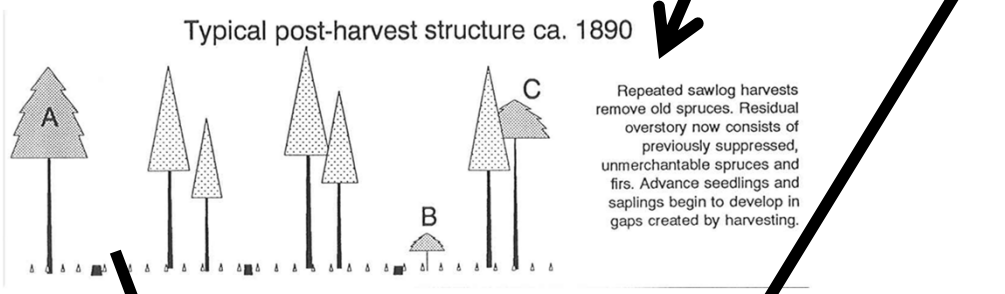
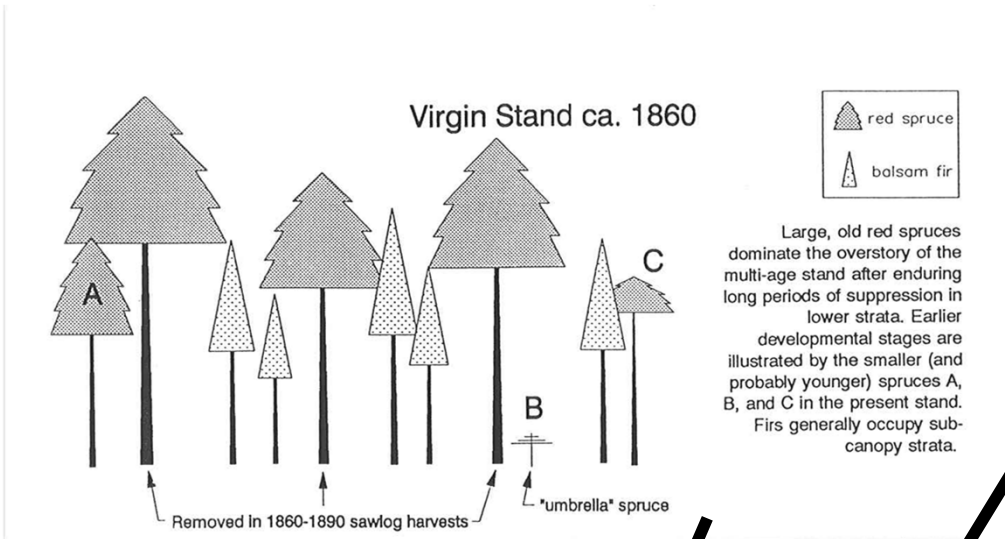


1975-----1980-----1985 (collapse)

Lost a few million acres of SF

Table 1. Forest Types in Maine as estimated in four forest inventories. (thousand acres)

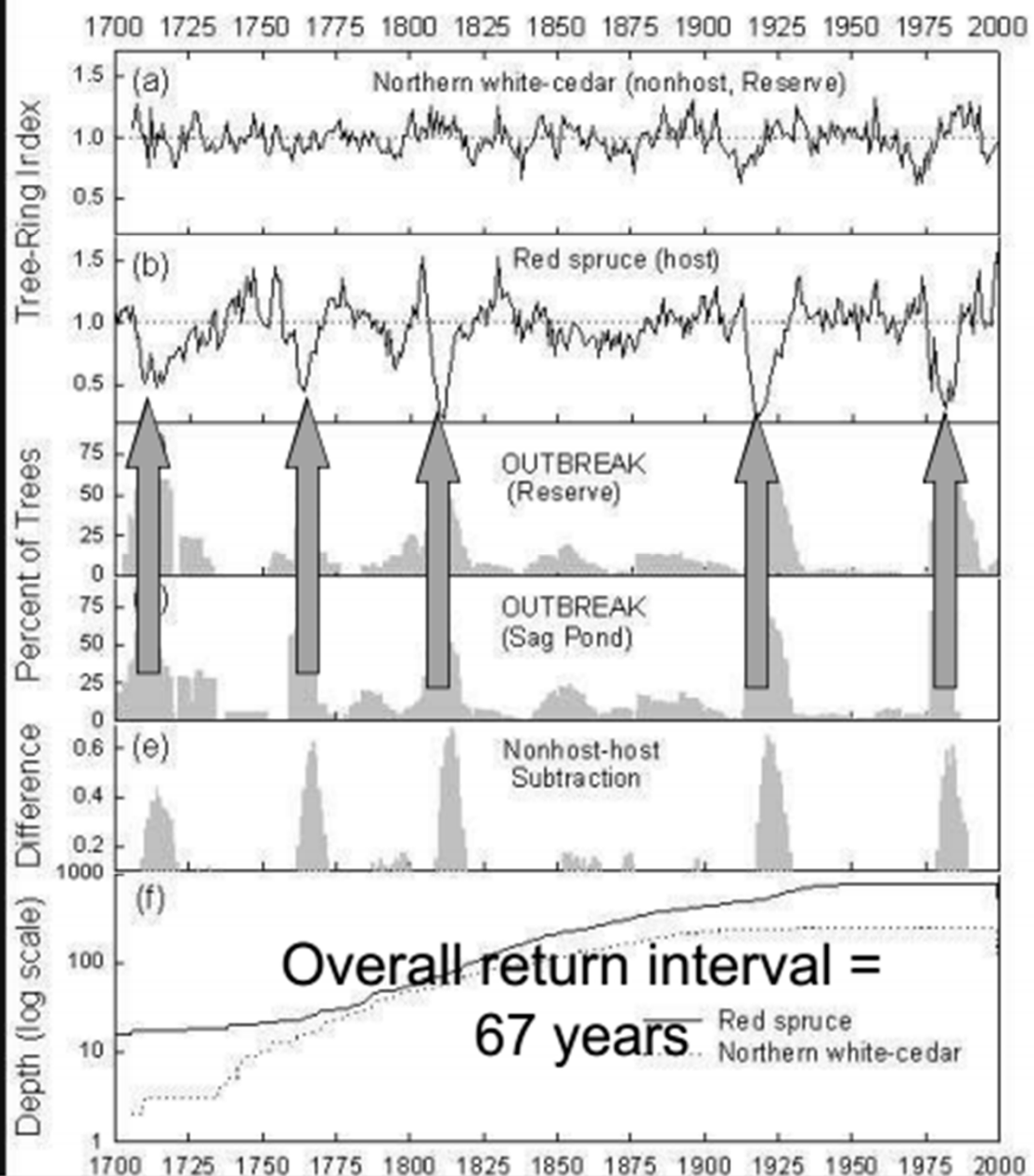
	1959	1972	1982	1995
Spruce and Fir	8,383	7,949	7,771	6,011
Northern Hardwoods	5,112	3,561	5,000	6,409
Aspen/Birch	1,243	1,419	1,505	2,250
White/Red Pine	1,639	1,812	2,195	1,246
Oak/Hickory	NA	253	307	456
Elm/Ash/Red Maple	505	1,714	238	435
Oak/White Pine	NA	185	36	128
Pitch Pine	NA	NA	8	7
TOTAL	16,882	16,893	17,060	16,939

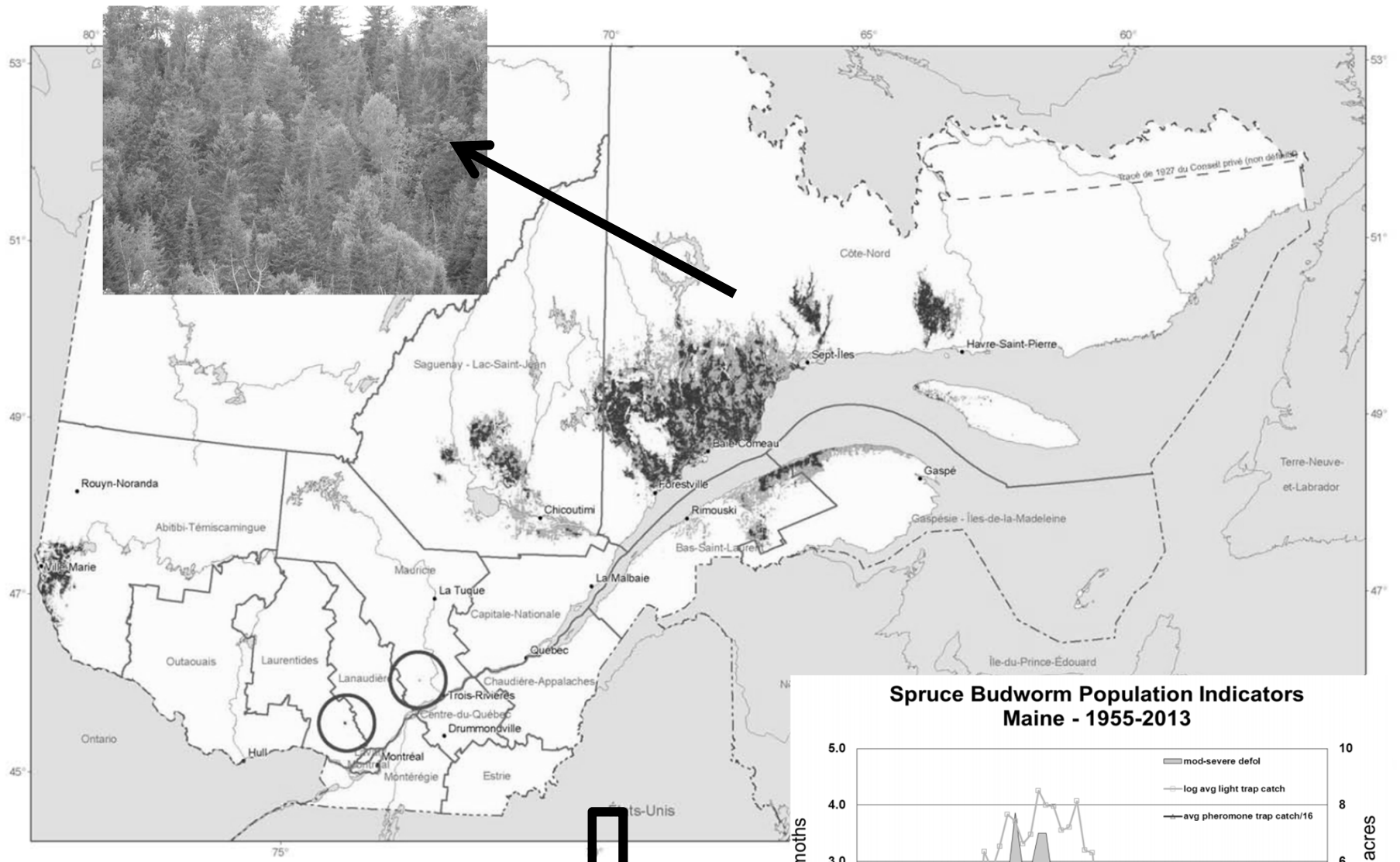


From Fraver,
Seymour, Speer,
and White (CJFR,
2007)

Has interval been
reduced (100 vs.
60?)

Two older outbreaks
documented: 1708,
1760 !





Québec méridional

Torreuse des bourgeons de l'épinette
Défoliation annuelle 2014

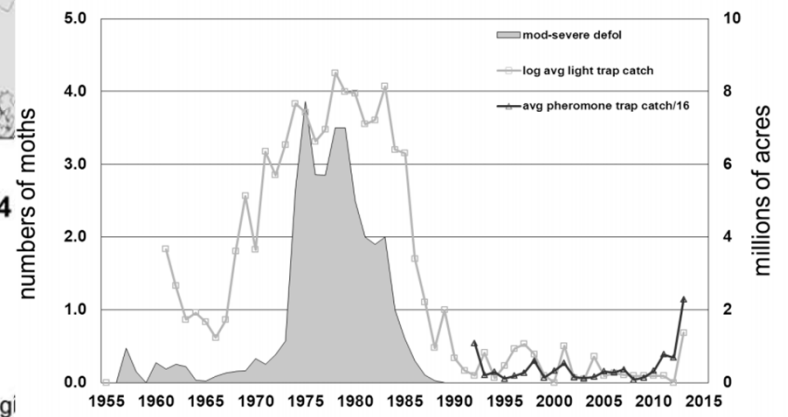
Source : Direction de la protection des forêts
Projection cartographique : Conique conforme de Lambert
avec deux parallèles d'échelle conservée (46° et 60°)



Défoliation 2014

- Légère
- Modérée
- Grave
- Limite de régi

Spruce Budworm Population Indicators Maine - 1955-2013



Things that are different

Forest (younger, less mature fir)

Landownership (not large private industrial)

Industry (fewer mills, more capacity)

Infrastructure (more roads, more targeted spray, better info (RS etal.))

Probably mid-cycle

We have experience



