

FCCI March 3, 2021 Webinar Background Material

Gypsy Moth and Southern Pine Beetle

Climate

New England and Northern New York Forest Ecosystem Vulnerability Assessment and Synthesis, https://www.fs.fed.us/nrs/pubs/gtr/gtr_nrs173.pdf (includes observed change and projected changes to variables important for forest health)

Gypsy Moth

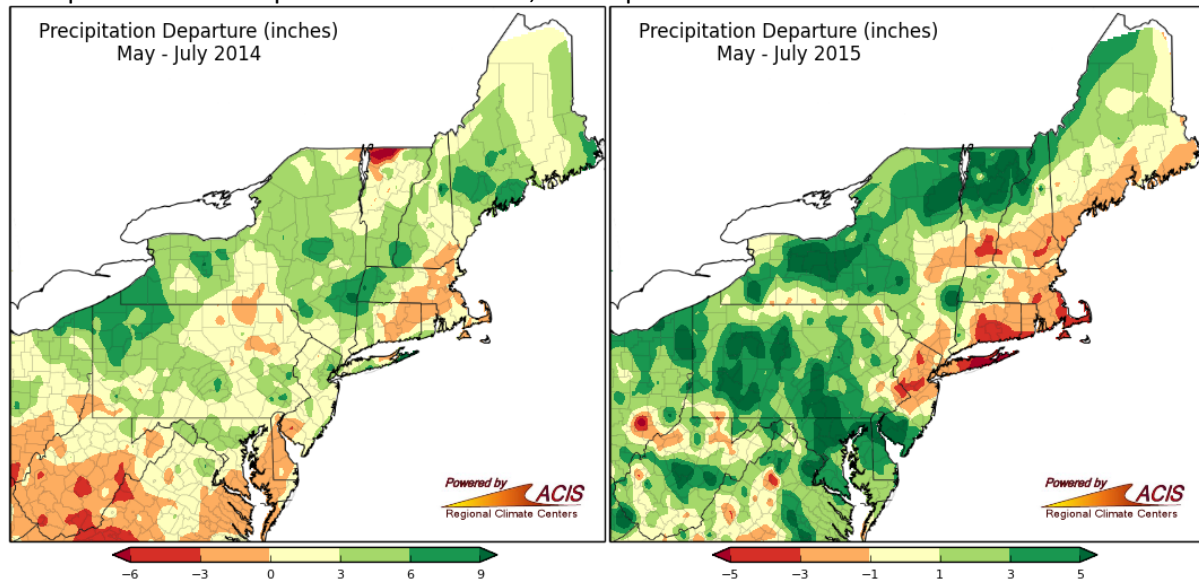
<https://www.youtube.com/watch?v=J-oPJPzKodc&feature=youtu.be> (Life cycle and natural enemies, 3 minute video)

<https://monde-geospatial.com/image-of-the-week-gypsy-moth-infestation-continues-in-new-england/> (remote sensing of most recent outbreak in S.NE, 1.5 minute video)

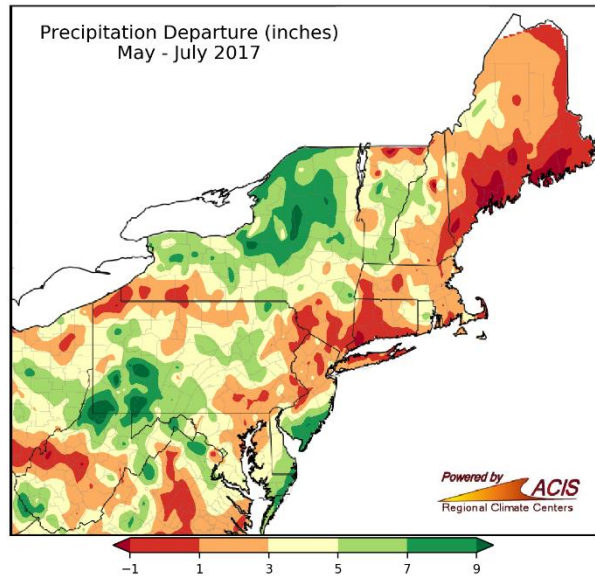
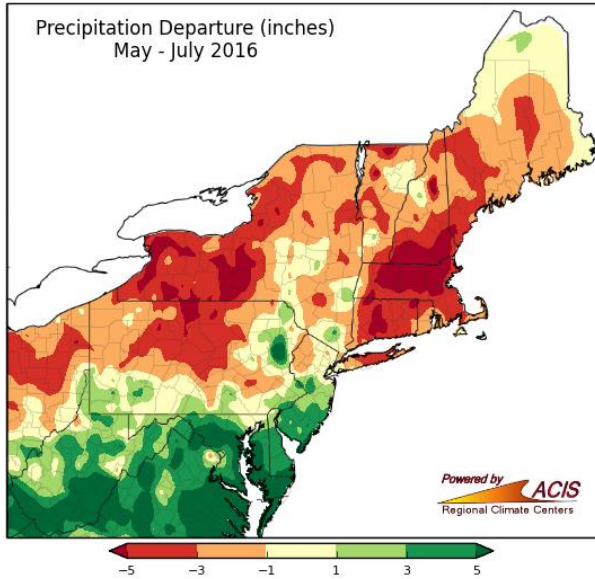
NOTE: Color MEANING CHANGES with MAP

Precipitation during caterpillar active period

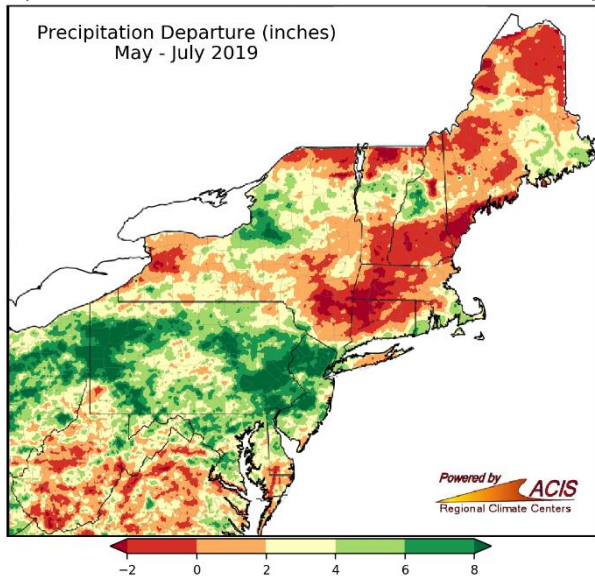
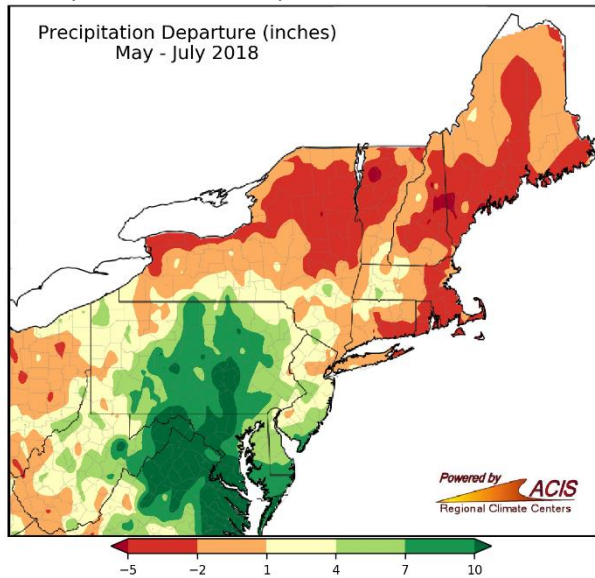
2014 portions of SNE up to 3" **below** normal, **2015** up to 5" **below** normal



2016 portions of SNE up to 5" **below** normal, **2017** around **normal** (peak of outbreak, fungus established, but late in season for foliage protection)



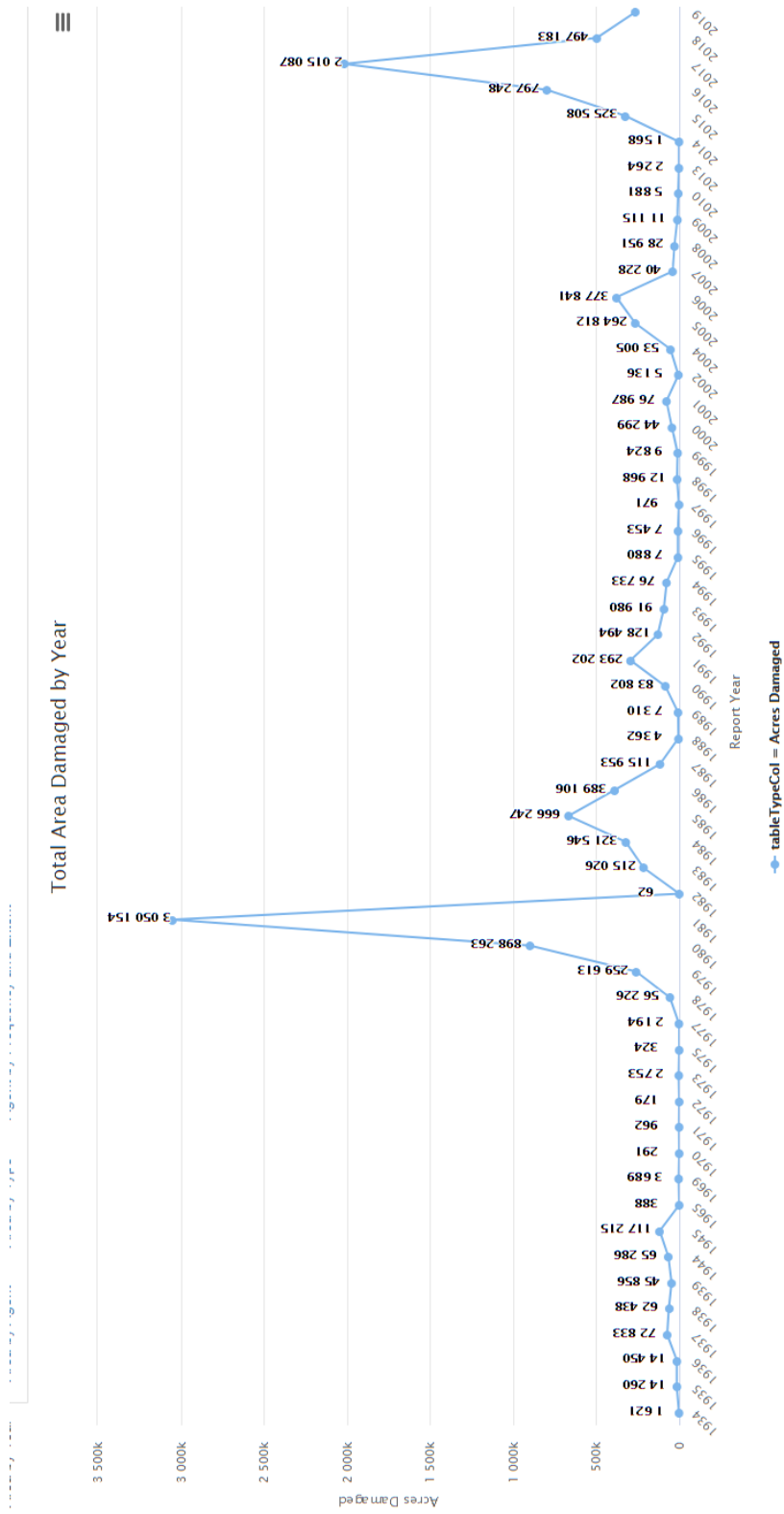
2018 portions of SNE up to 5" below normal, **2019** up to 2" below normal (outbreak continued collapse)



Source <https://www.nrcc.cornell.edu/regional/monthly/monthly.html>

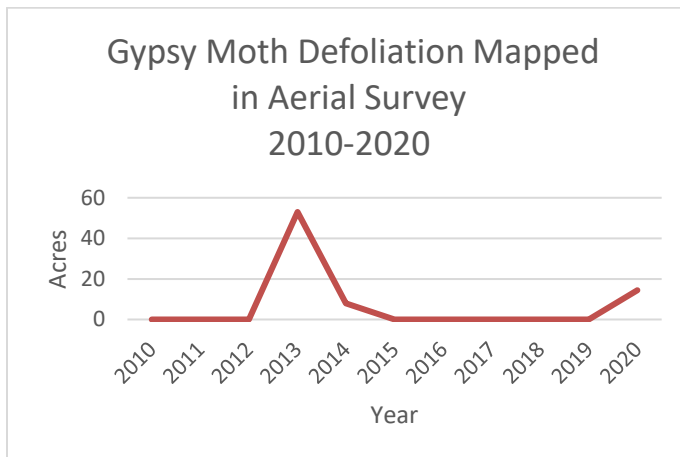
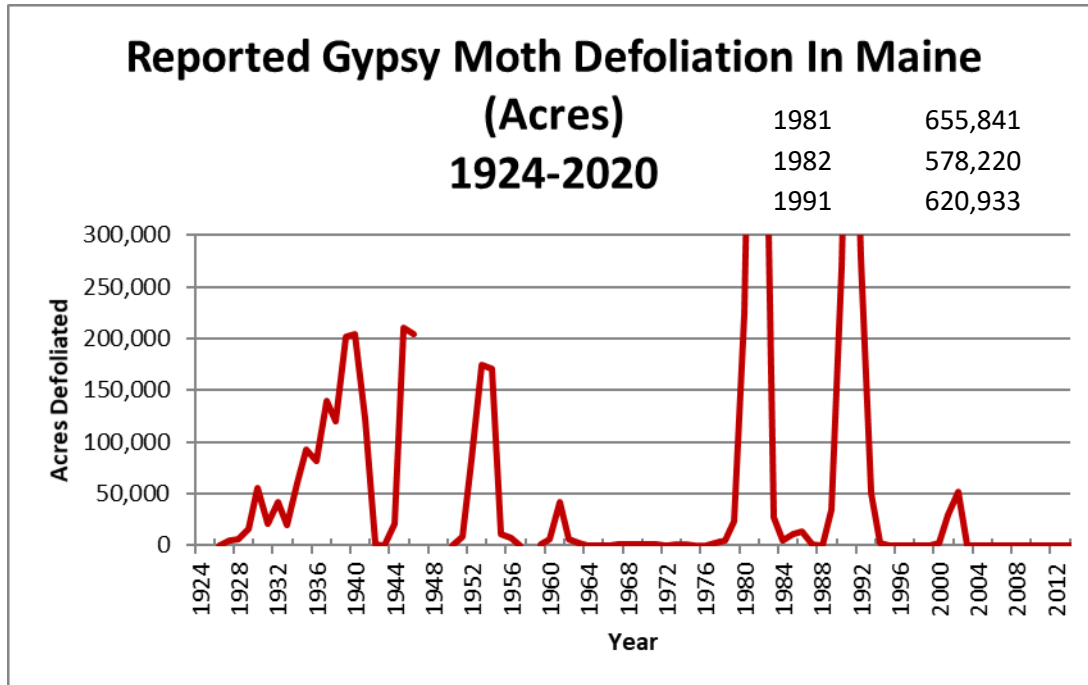
MA defoliation recent outbreak (mapped significant defoliation began in 2015, 231 ac mapped in 2014)(Source Felicia Hubacz, MA DCR) fmi: <https://www.mass.gov/guides/gypsy-moth-in-massachusetts>

Year	Gypsy Moth Defoliation	Total Oak Mortality
2015	38,175	545
2016	349,866	6,536
2017	923,186	122
2018	159,705	23,602
2019	9,955	57,912



SNE Defoliation history (Ct, RI, MA), Source: <https://www.uvm.edu/femc/forest-health-atlas> (may have data gaps for some years of record)

ME Defoliation history (Note scale changes between charts)



Southern Pine Beetle Resources

Threats to North American forests from southern pine beetle with warming winters:

<https://www.nature.com/articles/nclimate3375>

Expansion of Southern Pine Beetle into Northeastern Forests: Management and Impact of a Primary Bark Beetle in a New Region <https://academic.oup.com/jof/article/116/2/178/4930769> (full text available)

Ayers Presentation on SPB: <https://www.northeastipm.org/neipm/assets/File/NFCP-Presentations/Ayres-Matt-NFCP.pdf>