



New Jersey Agricultural  
Experiment Station

*Online version >*



*Beta-version 2022*

Contact: [twaller@njaes.Rutgers.edu](mailto:twaller@njaes.Rutgers.edu)

# Conifer Pest Scouting

## Scouting with growing degree-days



**Rutgers Green Industry Working Group**

Contact: Timothy Waller, Ph.D.

[twaller@njaes.Rutgers.edu](mailto:twaller@njaes.Rutgers.edu)

**WE R HERE WHEN YOU NEED US**

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of County Commissioners.  
Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

Scan here to

Report pest GDD deviations  
Comment on observations  
Share pest / plant photos



# Conifer - Pest Scouting Guide

~beta-version 2023~

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)



**Timing is everything in pest management!** You must obtain your local growing degree-day accumulation values to use this pest scouting guide. Degree-day models allow us to predict when to scout for pests and when to target vulnerable life stages of development (egg hatch, adult emergence, crawler activity, adult flight). Growing degree-days (**GDD50**) refer to the accumulation of heating units, which are the average air temperature over a

24h period minus the minimum temperature threshold. A ‘growing’ degree-day, means the min. (or base) temperature threshold is 50°F, whereas the max. temperature threshold is most often set to 95°F. **Growing degree-days are not exact and should be viewed as ranges, i.e., begin scouting prior to GDD50 expectations for any given pest.** Blind pesticide applications, without ground-truthing pest developmental stage, may not deliver desired outcomes in terms of control or ecological impacts on beneficials or wildlife. Please contact if you require assistance in obtaining your local GDD<sub>50</sub> values, which should be checked daily throughout the season. This scouting guide compiles research and observations from multiple universities. Please note many of these ranges have not been ground-truthed outside their original research area/range, and local discrepancies are likely to occur. Hence, we are constantly improving the accuracy of this document. Please alert [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext.1) if pest observations differ from those listed here or, insects not listed here, require additional conifer research.

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	
<b>SORTED BY GROWING DEGREE-DAY ACCUMULATION (Chronological)</b>							
Mites	Conifer rust mites	<i>Eriophyidae</i>	7	22	4	Overwintering eggs hatch	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	7	58	1	Overwintering adults become active / prevent egg laying	Conifer
Scale / Adelgid / Whitefly / Psyllid	Taxus mealybug	<i>Dysmicoccus wistariae</i>	7	91	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Elongate hemlock scale	<i>Fiorinia externa</i>	7	120	2	Spring control of overwintering stage	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	7	121	1	Overwintering eggs hatch	Conifer
Weevil	Pales weevil	<i>Hylobius pales</i>	7	121	1	Overwintering adults become active / prevent egg laying	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine bark adelgid	<i>Pineus strobi</i>	22	58	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Spruce bud scale	<i>Physokermes piceae</i>	22	120	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	22	148	2	Spring control of overwintering stage	Conifer

# Conifer - Pest Scouting Guide

~beta-version 2023~

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	
Caterpillar	Zimmerman pine moth	<i>Dioryctria zimmermani</i>	25	100	3	1st larvae	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	25	100	3	Spring control of overwintering stage	Conifer
Weevil	Northern pine weevil	<i>Pissodes approximatus</i>	25	100	4	1st adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	25	120	3	Spring control of overwintering stage	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	25	220	4	1st adults active	Conifer
Sawfly - Wasp	European pine sawfly	<i>Neodiprion sertifer</i>	35	145	1	Hatched larvae	Conifer
Scale / Adelgid / Whitefly / Psyllid	Fletcher scale	<i>Parthenolecanium fletcheri</i>	35	148	2	Spring control of overwintering stage	Conifer
Caterpillar	European pine shoot moth / borer	<i>Rhyacionia buoliana</i>	50	220	4	1st larvae active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyela parvicornis</i>	58	148	2	Cralwer activity	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine bark adelgid	<i>Pineus strobi</i>	58	618	2	Spring control of overwintering stage	Conifer
Aphids / Thrips	Balsam twig aphid	<i>Mindarus abietinus</i>	60	100	4	Egg hatch	Conifer
Borer - Caterpillar	Eastern pine shoot borer	<i>Eucosma gloriola</i>	75	200	4	1st adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	90	180	4	1st adults active - Douglas fir	Conifer
Aphids / Thrips	Balsam twig aphid	<i>Mindarus abietinus</i>	100	150	4	Stem mothers present (control target)	Conifer
Beetle	Pine engraver ( <i>Ips</i> bark beetle)	<i>Ips spp.</i>	100	150	4	1st adults active	Conifer
Sawfly - Wasp	European pine sawfly	<i>Neodiprion sertifer</i>	100	195	4	1st larvae active	Conifer
Caterpillar	Larch casebearer	<i>Coleophora laricella</i>	120	150	4	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Hemlock woolly adelgid	<i>Adelges tsugae</i>	150	150	1	Eggs and 10% hatch	Conifer

# Conifer - Pest Scouting Guide

~beta-version 2023~

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	150	175	4	1st egg hatch	Conifer
Caterpillar	Spruce needleminer	<i>Endothenia alboleaneana</i>	150	200	4	1st larvae active	Conifer
Leafminer / Midge / Fly	Balsam gall midge	<i>Paradiplosis tumifex</i>	150	300	4	Adults laying eggs	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	190	363	1	Immatures/Adults	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	200	310	4	1st galls visible - Spruce	Conifer
Leafminer / Midge / Fly	Douglas fir needle midge	<i>Contarinia pseudotsugae</i>	200	400	3	Adults emerge from soil	Conifer
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuiella</i>	245	360	1	Larvae Treatments (1st generation)	Conifer
Sawfly - Wasp	Pine sawflies (Red-headed)	<i>Neodiprion lecontei</i>	246	1388	1	Larvae (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	250	310	5	egg hatch, galls begin forming (not a control target)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	298	448	1	Crawlers (1st generation) - control target	Conifer
Mites	Pine eriophyid mites	<i>Eriophyidae</i>	298	533	5	Typical treatment window	Conifer
Beetle	Turpentine beetle	<i>Dendroctonus terebrans</i>	300	350	4	Parent beetles colonizing brood material	Conifer
Weevil	Pine root collar weevil	<i>Hylobius radicis</i>	300	350	4	1st adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Hemlock woolly adelgid	<i>Adelges tsugae</i>	350	350	1	Eggs and 50% hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Elongate Hemlock Scale	<i>Fiorinia externa</i>	360	700	1	Crawlers (1st generation)	Conifer
Caterpillar	Larch casebearer	<i>Coleophora laricella</i>	363	618	2,4	Nymphs active - typical treatment window	Conifer
Leafminer / Midge / Fly	Pine needle midge	<i>Thecodiplosis brachynteroides</i>	400	500	7	Adults (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella sp.</i>	400	500	3	Crawlers (1st generation)	Conifer

# Conifer - Pest Scouting Guide

~beta-version 2023~

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	400	1000	4	Crawlers	Conifer
Caterpillar	Hemlock looper	<i>Lambdina fiscellaria</i>	448	707	5	Typical treatment window	Conifer
Beetle	Pine shoot beetle	<i>Tomicus piniperda</i>	450	500	4	Adults emerge; begin shoot feeding - control target	Conifer
Beetle	Pine Chafer (Anomela Beetle)	<i>Anomala obliqua</i>	450	600	7	Adults (1st generation)	Conifer
Caterpillar	European pine shoot moth	<i>Rhyacionia buoliana</i>	480	710	5	Larvae Treatment	Conifer
Leafminer / Midge / Fly	Arborvitae Leafminer	<i>Argyresthia thuiella</i>	533	700	1	Adults (egg laying) - larvae treatments	Conifer
Leafminer / Midge / Fly	Balsam gall midge	<i>Paradiplosis tumifex</i>	550	700	4	Galls apparent	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	550	700	7	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	600	800	3	First crawler emergence	Conifer
Caterpillar	Bagworm	<i>Thyridopteryx ephemeraeformis</i>	600	900	1	Larvae (early instars) - ONLY CONTROL WINDOW	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	600	1000	7	Nymphs active - Douglas fir (control target)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Sprucebud scale	<i>Physokermes hemicyrus</i>	700	1150	4	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	707	1260	1	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella pini</i>	750	800	4	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	1000	1200	4	Egg hatch ends, last of crawlers	Conifer
Weevil	Northern pine weevil	<i>Pissodes nemorensis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	Pales weevil	<i>Hylobius pales</i>	1200	1400	4	Adults 2nd generation	Conifer
Weevil	Pine root collar weevil	<i>Hylobius radicis</i>	1200	1400	4	2nd generation adults active	Conifer

# Conifer - Pest Scouting Guide

*~beta-version 2023~*

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	
Weevil	White pine weevil	<i>Pissodes strobi</i>	1200	1400	4	2nd generation adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	1290	1917	3	Crawlers emerge (2nd generation) - control target	Conifer
Scale / Adelgid / Whitefly / Psyllid	Hemlock scale	<i>Abgrallaspis ithacae</i>	1388	2154	5	Typical treatment window	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1500	1775	1	Adults/nymphs (Douglas Fir)	Conifer
Borer - Caterpillar	Nantucket tip moth	<i>Rhyacionia frustrana</i>	1514	1917	1	Adults 2nd generation	Conifer
Mites	Rust-mites	<i>Nalepella and Setoptus spp.</i>	1644	2030	1	Nymphs / adults	Conifer
Caterpillar	Juniper webworm	<i>Dichomeris marginella</i>	1645	1917	1	Larvae Treatment	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	1750	2130	1, 4	Crawlers emerge (2nd generation)	Conifer
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuiella</i>	1800	2200	1	Larvae Treatment (3rd generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1850	1950	1	Galls open (Spruce)	Conifer
Caterpillar	Zimmerman pine moth	<i>Dioryctria zimmermani</i>	1917	2154	5	Treatment window (adult flight-1700 GDD)	Conifer
Aphids / Thrips	White pine aphid	<i>Cinara strobi</i>	1991	2271	1	Adults	Conifer
Scale / Adelgid / Whitefly / Psyllid	Maskell scale	<i>lepidosaphes pallia</i>	2035	-	6	Egg hatch / crawler (2nd generation)	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	2375	2806	5	Typical treatment window	Conifer
Scale / Adelgid / Whitefly / Psyllid	Elongate hemlock scale	<i>Fiorinia externa</i>	2515	2625	1	Typical treatment window - fall activity	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	2800	3000	3	Fall control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	2800	3000	3	Fall control of overwintering stage	Conifer

# Conifer - Pest Scouting Guide

~beta-version 2023~

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	
SORT BY PEST GROUP							
Aphids / Thrips	Balsam twig aphid	<i>Mindarus abietinus</i>	60	100	4	Egg hatch	Conifer
Aphids / Thrips	Balsam twig aphid	<i>Mindarus abietinus</i>	100	150	4	Stem mothers present (control target)	Conifer
Aphids / Thrips	White pine aphid	<i>Cinara strobi</i>	1991	2271	1	Adults	Conifer
Beetle	Pine engraver (Ips bark beetle)	<i>Ips spp.</i>	100	150	4	1st adults active	Conifer
Beetle	Turpentine beetle	<i>Dendroctonus terebrans</i>	300	350	4	Parent beetles colonizing brood material	Conifer
Beetle	Pine shoot beetle	<i>Tomicus piniperda</i>	450	500	4	Adults emerge; begin shoot feeding - control target	Conifer
Beetle	Pine Chafer (Anomela Beetle)	<i>Anomala obliqua</i>	450	600	7	Adults (1st generation)	Conifer
Borer - Caterpillar	Eastern pine shoot borer	<i>Eucosma gloriola</i>	75	200	4	1st adults active	Conifer
Borer - Caterpillar	Nantucket tip moth	<i>Rhyacionia frustrana</i>	1514	1917	1	Adults 2nd generation	Conifer
Caterpillar	Zimmerman pine moth	<i>Dioryctria zimmermani</i>	25	100	3	1st larvae	Conifer
Caterpillar	European pine shoot moth / borer	<i>Rhyacionia buoliana</i>	50	220	4	1st larvae active	Conifer
Caterpillar	Larch casebearer	<i>Coleophora laricella</i>	120	150	4	Egg hatch	Conifer
Caterpillar	Spruce needleminer	<i>Endothenia albolineana</i>	150	200	4	1st larvae active	Conifer
Caterpillar	Larch casebearer	<i>Coleophora laricella</i>	363	618	2,4	Nymphs active - typical treatment window	Conifer
Caterpillar	Hemlock looper	<i>Lambdina fiscellaria</i>	448	707	5	Typical treatment window	Conifer
Caterpillar	European pine shoot moth	<i>Rhyacionia buoliana</i>	480	710	5	Larvae Treatment	Conifer
Caterpillar	Juniper webworm	<i>Dichomeris marginella</i>	1645	1917	1	Larvae Treatment	Conifer

# Conifer - Pest Scouting Guide

~beta-version 2023~

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	
Caterpillar	Zimmerman pine moth	<i>Dioryctria zimmermani</i>	1917	2154	5	Treatment window (adult flight-1700 GDD)	Conifer
Caterpillar	Bagworm	<i>Thyridopteryx ephemeraeformis</i>	600	900	1	Larvae (early instars) - ONLY CONTROL WINDOW	Conifer
Leafminer / Midge / Fly	Balsam gall midge	<i>Paradiplosis tumifex</i>	150	300	4	Adults laying eggs	Conifer
Leafminer / Midge / Fly	Douglas fir needle midge	<i>Contarinia pseudotsugae</i>	200	400	3	Adults emerge from soil	Conifer
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuiella</i>	245	360	1	Larvae Treatments (1st generation)	Conifer
Leafminer / Midge / Fly	Pine needle midge	<i>Thecodiplosis brachynteroides</i>	400	500	7	Adults (1st generation)	Conifer
Leafminer / Midge / Fly	Arborvitae Leafminer	<i>Argyresthia thuiella</i>	533	700	1	Adults (egg laying) - larvae treatments	Conifer
Leafminer / Midge / Fly	Balsam gall midge	<i>Paradiplosis tumifex</i>	550	700	4	Galls apparent	Conifer
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuiella</i>	1800	2200	1	Larvae Treatment (3rd generation)	Conifer
Mites	Conifer rust mites	<i>Eriophyidae</i>	7	22	4	Overwintering eggs hatch	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	7	121	1	Overwintering eggs hatch	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	150	175	4	1st egg hatch	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	190	363	1	Immatures/Adults	Conifer
Mites	Pine eriophyid mites	<i>Eriophyidae</i>	298	533	5	Typical treatment window	Conifer
Mites	Rust-mites	<i>Nalepella and Setoptus spp.</i>	1644	2030	1	Nymphs / adults	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	2375	2806	5	Typical treatment window	Conifer
Sawfly - Wasp	European pine sawfly	<i>Neodiprion sertifer</i>	35	145	1	Hatched larvae	Conifer
Sawfly - Wasp	European pine sawfly	<i>Neodiprion sertifer</i>	100	195	4	1st larvae active	Conifer

# Conifer - Pest Scouting Guide

~beta-version 2023~

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	
Sawfly - Wasp	Pine sawflies (Red-headed)	<i>Neodiprion lecontei</i>	246	1388	1	Larvae (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Taxus mealybug	<i>Dysmicoccus wistariae</i>	7	91	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Elongate hemlock scale	<i>Fiorinia externa</i>	7	120	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine bark adelgid	<i>Pineus strobi</i>	22	58	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Spruce bud scale	<i>Physokermes piceae</i>	22	120	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	22	148	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	25	100	3	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	25	120	3	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Fletcher scale	<i>Parthenolecanium fletcheri</i>	35	148	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyela parvicornis</i>	58	148	2	Cralwer activity	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine bark adelgid	<i>Pineus strobi</i>	58	618	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	90	180	4	1st adults active - Douglas fir	Conifer
Scale / Adelgid / Whitefly / Psyllid	Hemlock woolly adelgid	<i>Adelges tsugae</i>	150	150	1	Eggs and 10% hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	200	310	4	1st galls visible - Spruce	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	250	310	5	egg hatch, galls begin forming (not a control target)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	298	448	1	Crawlers (1st generation) - control target	Conifer
Scale / Adelgid / Whitefly / Psyllid	Hemlock woolly adelgid	<i>Adelges tsugae</i>	350	350	1	Eggs and 50% hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Elongate Hemlock Scale	<i>Fiorinia externa</i>	360	700	1	Crawlers (1st generation)	Conifer

# Conifer - Pest Scouting Guide

~beta-version 2023~

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	
Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella sp.</i>	400	500	3	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	400	1000	4	Crawlers	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	550	700	7	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	600	800	3	First crawler emergence	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	600	1000	7	Nymphs active - Douglas fir (control target)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Sprucebud scale	<i>Physokermes hemicyrus</i>	700	1150	4	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	707	1260	1	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella pini</i>	750	800	4	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	1000	1200	4	Egg hatch ends, last of crawlers	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	1290	1917	3	Crawlers emerge (2nd generation) - control target	Conifer
Scale / Adelgid / Whitefly / Psyllid	Hemlock scale	<i>Abgrallaspis ithacae</i>	1388	2154	5	Typical treatment window	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1500	1775	1	Adults/nymphs (Douglas Fir)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	1750	2130	1, 4	Crawlers emerge (2nd generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1850	1950	1	Galls open (Spruce)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Maskell scale	<i>lepidosaphes pallia</i>	2035	-	6	Egg hatch / crawler (2nd generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Elongate hemlock scale	<i>Fiorinia externa</i>	2515	2625	1	Typical treatment window - fall activity	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	2800	3000	3	Fall control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	2800	3000	3	Fall control of overwintering stage	Conifer

# Conifer - Pest Scouting Guide ~beta-version 2023~

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	
Weevil	White pine weevil	<i>Pissodes strobi</i>	7	58	1	Overwintering adults become active / prevent egg laying	Conifer
Weevil	Pales weevil	<i>Hylobius pales</i>	7	121	1	Overwintering adults become active / prevent egg laying	Conifer
Weevil	Northern pine weevil	<i>Pissodes approximatus</i>	25	100	4	1st adults active	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	25	220	4	1st adults active	Conifer
Weevil	Pine root collar weevil	<i>Hylobius radicis</i>	300	350	4	1st adults active	Conifer
Weevil	Northern pine weevil	<i>Pissodes nemorensis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	Pales weevil	<i>Hylobius pales</i>	1200	1400	4	Adults 2nd generation	Conifer
Weevil	Pine root collar weevil	<i>Hylobius radicis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	1200	1400	4	2nd generation adults active	Conifer

Please note; Growing degree-day ranges are for scouting purposes only, and may not account for all variations in locations, micro-climates, or pest populations. Many of these ranges have not been ground-truthed outside their original research range, and local discrepancies are likely to occur. Therefor please help us collectively improve the accuracy of this document, by alerting [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext.1) if pest observations differ from those listed here, or insects not listed here are of interest and require additional research. Rutgers University is not responsible for the misuse of this information.

# Conifer - Pest Scouting Guide ~beta-version 2023~

Compiled by Timothy Waller, PhD. Rutgers, The State University of New Jersey (2023) – see source references.

Please report observation differences to: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) (856-451-2800 ext. 1)

## References

Institution	Link	Cited #
Rutgers University	<i>Rutgers Cooperative Extension - Landscape IPM Notes (numerous)</i>	1
Cornell Univ. & Univ. of New Hampshire	<a href="http://ccetompkins.org/resources/using-growing-degree-days-for-insect-management">http://ccetompkins.org/resources/using-growing-degree-days-for-insect-management</a>	2
Penn State University	<a href="https://extension.psu.edu/ipm-basics-for-christmas-trees#section-2">https://extension.psu.edu/ipm-basics-for-christmas-trees#section-2</a>	3
Michigan State University	<a href="https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_conifer_insects">https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_conifer_insects</a>	4
University of New Hampshire	<a href="https://www.agriculture.nh.gov/publications-forms/documents/landscape-pests.pdf">https://www.agriculture.nh.gov/publications-forms/documents/landscape-pests.pdf</a>	5
University of Maryland	<a href="https://extension.umd.edu/ipm/pest-predictive-calendar-landscapenursery">https://extension.umd.edu/ipm/pest-predictive-calendar-landscapenursery</a>	6
Michigan State University	<a href="https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_landscape_insects">https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_landscape_insects</a>	7

## Degree-Day Calculators

Link	Selection criteria per calculator ( <b>MODEL</b> type & <b>LOW</b> temp. threshold & <b>UPPER</b> temp. threshold)	Base
<a href="https://uspest.org/dd/model_app">https://uspest.org/dd/model_app</a>	Select "All models" --> "Simple average / DD" --> set 50F (lower/base) --> set 95F (upper)	50F
<a href="https://newwa.cornell.edu/degree-day-calculator/">https://newwa.cornell.edu/degree-day-calculator/</a>	Select "Base 50" --> modify date range	50F

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of County Commissioners. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

Copywrite – Rutgers, The State University of New Jersey, and all contributing entities (2023)

# **PLEASE VISIT THESE LINKS FOR MORE INFORMATION**

**(FOLLOW THE URL IN PDF FORMAT OR SCAN THE QR CODE IF HANDHELD)**

## **UPEST**

### **Growing degree-day calculator**

[https://uspest.org/dd/model\\_app](https://uspest.org/dd/model_app)



## **NEWA**

### **Growing degree-day calculator**

<https://newa.cornell.edu/degree-day-calculator>



## **Rutgers Plant and Pest Advisory**

<https://plant-pest-advisory.rutgers.edu/category/landscape-nursery-tur>



## **Instructions on obtaining your local growing degree-days**

<https://plant-pest-advisory.rutgers.edu/?s=obtaining>



## **Additional Growing Degree-day Resources and Source / Citation Information**

<http://ccetompkins.org/resources/using-growing-degree-days-for-insect-management>  
<https://extension.psu.edu/ipm-basics-for-christmas-trees#section-2>

[https://www.canr.msu.edu/ipm/agriculture/christmas\\_trees/gdd\\_of\\_conifer\\_insects](https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_conifer_insects)

<https://www.agriculture.nh.gov/publications-forms/documents/landscape-pests.pdf>  
<https://extension.umd.edu/ipm/pest-predictive-calendar-landscapenursery>

[https://www.canr.msu.edu/ipm/agriculture/christmas\\_trees/gdd\\_of\\_landscape\\_insects](https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_landscape_insects)

[https://www.agriculture.pa.gov/Plants\\_Land\\_Water/PlantIndustry/Entomology/spotted\\_lanternfly/Pages/default.aspx](https://www.agriculture.pa.gov/Plants_Land_Water/PlantIndustry/Entomology/spotted_lanternfly/Pages/default.aspx)

**SUBSCRIBE TO THE RUTGERS PLANT AND PEST ADVISORY  
FOR THE MOST UP-TO-DATE INFORMATION!**

Contact: [twaller@njaes.rutgers.edu](mailto:twaller@njaes.rutgers.edu) for more information

# PEST SCOUTING NOTES

WE R HERE WHEN YOU NEED US