SCBI Tree Disease Guide

Introduction

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Tree Species of Concern

Table 1. Summary of the health/ mortality status of all tree species in the SCBI ForestGEO plot. Included is IUCN status, n of living individuals in the SCBI ForestGEO plot, numbers of known species of forest insects or pathogens (FIP) and exotic FIP (EFIP) affecting the species, levels of concern based on mortality rates and "alive-unhealthy" (AU) status, and overall level of concern based on these metrics. Codes: H = high, M = moderate; L = low. Tree species codes are defined in the document SCBI_ForestGEO_sp_ecology.csv.

Tree species code	IUCN status	n living	n FIP	n EFIP	concern level mortality rates	concern level AU status	concern level overall
acne	Least concern		10	1			
acpl	Least concern		9	1			
acru	Least concern		11	1			
aial			1	1			
amar	Least concern		0	0	H	L	
astr	Least concern		0	0			
caca	Least concern		0	0			
caco	Least concern		5	0			
cagl	Least concern		4	0			
caovl			4	0			
cato	Least concern		4	0			
cade	**Critically Endangered**		**1**	**1**			**H**
ceoc	Least concern		0	0			
ceca	**Least concern**		**1**	**0**	**H**	**H**	**M**
chvi	Least concern		1	1			
coal	Least concern		1	0			
cofl	Least concern		3	1			
divi	Least concern		0	0			
fagr	Least concern		7	2			
fram	**Critically Endangered**		**10**	**1**			**H**
frni	**Critically Endangered**		**10**	**1**			**H**
frpe	**Critically Endangered**		**9**	**1**			**H**
juci	**Endangered**	**1**	**4**	**1**	**M**	**H**	**H**
juni	Least concern		4	0			
litu	Least concern		4	0			
nysy	Least concern		0	0			
pato			0	0			
pipu	Least concern		12	0			
pist	Least concern		14	0			
pivi	Least concern		12	0			

Tree species code	IUCN status	n living	n FIP	n EFIP	mortality rates	AU status	overall
ploc	Least concern		1	0			
prav			2	0			
prpe			2	0			
prse			2	0			
qual			13	2			
quco			13	2			
qufa			13	2			
qumi			13	2			
qumu			13	2			
qupr			13	2			
quru			14	2			
quve			13	2			
rops			3	0			
saal			3	0			
tiam			4	2			
ulam			**12**	**4**			**H**
ulru			12	4			

Tree- Disease Matrix

Table 2. Matrix of forest insects and pathogens likely to occur at the SCBI Forest-GEO plot, and the tree taxa they affect. Tree species codes are defined in the document SCBI_ForestGEO_sp_ecology.csv.

Part 1/2: Tree species codes ACNE-FRPE

.	acne	acpl	acru	aial	amar	astr	caca	caco	cagl	caovl	cato	cade	ceoc	ceca	chvi	coal	cofl	divi	fagr	fram	frmi	frpe
Xylella fastidiosa (Bacterial Leach Scorch)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anoplophora glabripennis (Asian Longhorn Beetle)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nakacisina disstria (Forest Tent Caterpillar)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycobius speciosus (Maple Borer)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heterocampa guttivitta (Saddled Prominent)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ennomos subsignaria (Elm Spanworm)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Phellinus igniarus / Phellinus laevigatus / Phellinus tremulae (White Trunk Rot)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Climacodon septentrionale (Northern Tooth Bracket Fungus)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Cicadellidae (leafhoppers)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
Boisea trivittata (Boxelder Bug)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracelemensia acerofoliella (Maple Leafcutter)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aphis gossypii (Aphid)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lycorma delicatula (Spotted Lanternfly)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scolytus quadrispinosus (Hickory Bark Beetle)	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Hyphantria cunea (Fall Webworm)	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1
Heterocampa manteo (Variable Oakleaf Caterpillar)	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1
Nectria cinnabarina (Coral Spot Canker)	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1
Ophignomonia leptostyla (Walnut Anthracnose)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cryphonectria parasitica (Chesnut Blight)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Neofusicoccum spp. (Stem Canker)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Agrilus planipennis (Emerald Ash Borer)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1
Synanthedon scitula (Dogwood Borer)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0

.	acne	acpl	acru	aial	amar	astr	caca	caco	cagl	caovl	cato	cade	ceoc	ceca	chvi	coal	cofl	divi	fagr	fram	frmi	frpe
Discula distructiva (Dogwood Anthracnose)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Cryptococcus fagisuga Lindinger (Woolly Beech Scale)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Neconectria spp. , Nectria coccinea (Beech Bark Disease)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Litylenchus crenatae n. sp (Beech Leaf Disease)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Alsophila pometaria (Fall Cankerworm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Candidatus Phytoplasma (Ash Yellows)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Podosesia syringae (Lilac Ash Borer)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1

.	juci	juni	litu	nysy	pato	pipu	pist	pivi	ploc	prav	prpe	prse	qual	quco	qufa	qumi	qumu	qupr	quru	quve	rops	saal	tiam	ulam	ulru
Xylella fastidiosa (Bacterial Leach Scorch)	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1	1	0	0	0	1	1
Anoplophora glabripennis (Asian Longhorn Beetle)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
Nakacisina disstria (Forest Tent Caterpillar)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
Ennomos subsignaria (Elm Spanworm)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	1	1
Cicadellidae (leafhoppers)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1
Aphis gossypii (Aphid)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyphantria cunea (Fall Webworm)	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	1	1
Heterocampa manteo (Variable Oakleaf Caterpillar)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	1	1
Nectria cinnabarina (Coral Spot Canker)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Ophignomonia leptostyla (Walnut Anthracnose)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Neofusicoccum spp. (Stem Canker)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alsophila pometaria (Fall Cankerworm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Ophiognomonia clavigignenti-juglandacearum (Butternut Canker)	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Geosmithia morbida (Thousands Cankers Disease)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Neonectria galligena (Nectrua Canker)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Euzophera ostricolorella (Root Collar Borer)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Odontopus calcaetus (Yellow Poplar Weevil)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Ceratocystis spp. (Bluestain Fungus)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ophiostoma spp. (Bluestain Fungus)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sirex noctilio (Sirex Woodwasp)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scleroderris lagerbergii (Sclerroderis Canker)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ips pini (Pine Engraver Beetle)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ips grandicollis (Southern Pine Engraver)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ips calligraphus (Six-spined Ips)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ips avulsus (Small Southern Pine Engraver)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

.	juci	juni	litu	nysy	pato	pipu	pist	pivi	ploc	prav	prpe	prse	qual	quco	qufa	qumi	qumu	qupr	quru	quve	rops	saal	tiam	ulam	ulru
Choristoneura pinus (Jack Pine Budworm)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cronartium quercuum (Fusiform Rust)	0	0	0	0	0	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
Phellinus pini (Red trunk Rot)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dendroctonus frontalis Zimmermann (Southern Pine Beetle)	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cronartium ribicola (White Pine Blister Rust)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pineus strobi (Pine Bark Adelgid)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Euzophera semifuneralis (American Plum Borer)	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Apiosporina morbosa (Black Knot Disease)	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymantria dispar (Gypsy Moth)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
Phytophthora ramorum (Sudden Oak death)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
Agrilus bilineatus (Two Lined Chestnut Borer)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
Armillaria spp. (Honey Fungus)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
Ceratocystis fagacearum (Oak Wilt)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
Anisota senatoria (Orangestriped Oakworm)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
Enaphalodes rufulus (Red Oak Borer)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Phellinus robiniae / Phellinus rimosus / Polyporus (Heart Rot Fungus)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Odontota dorsalis (Black Locust Leaf Miner)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Megacyllene robiniae (Locust Borer)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Raffaelea lauricola (Laurel Wilt)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Xyleborus glabratus (Redbay Ambrosia Beetle)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Popillia japonica (Japanese Beetle)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Thrips calcaratus (Basswood Thrips)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Scolytus multistriatus (Smaller European Elm Bark Beetle)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Scolytus schevyrewi (Banded Elm Bark Beetle)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Ophiostoma ulmi/Ophiostoma nova-ulmi/Ophiostoma himal-ulmi (Dutch Elm Disease)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

Part 2/2: Tree species codes JUCI-ULRU *(continued)*

.	juci	juni	litu	nysy	pato	pipu	pist	pivi	ploc	prav	prpe	prse	qual	quco	qufa	qumi	qumu	qupr	quru	quve	rops	saal	tiam	ulam	ulru
Scaphoideus luteolus Van Duzee (Whitebanded Leafhopper)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Hylurgopinus rufipes (Native Elm Bark Beetle)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1