

SPECIES: *Lonicera japonica*

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INTRODUCTORY**SPECIES: *Lonicera japonica***

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Swearingen, Jil M. USDI, National Park Service. Image 0581013.
<http://www.forestryimages.org/>. 10/29/02.

Fred Fishel. University of Missouri, 2002.

AUTHORSHIP AND CITATION:

Munger, Gregory T. 2002. *Lonicera japonica*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/> [2007, September 24].

FEIS ABBREVIATION:

LONJAP

SYNONYMS:

none

NRCS PLANT CODE [[139](#)]:

LOJA

COMMON NAMES:

Japanese honeysuckle

TAXONOMY:

The currently accepted name for Japanese honeysuckle is *Lonicera japonica* Thunb. (Caprifoliaceae)

[[39](#),[40](#),[53](#),[58](#),[60](#),[61](#),[73](#),[102](#),[119](#),[141](#),[148](#),[149](#)].

LIFE FORM:

Vine

FEDERAL LEGAL STATUS:

No special status

OTHER STATUS:

Japanese honeysuckle is listed by the state of Vermont as a Category II plant: "exotic plant species considered to have the potential to displace native plants either on a localized or widespread scale" [[139](#)]. It is listed as an "exotic weed" and prohibited for sale within the state by the Illinois Department of Conservation [[136](#)].

DISTRIBUTION AND OCCURRENCE

SPECIES: *Lonicera japonica*

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GENERAL DISTRIBUTION:

Japanese honeysuckle is native to eastern Asia. It was introduced to North America in the early 1800s [[96](#)]. Self-sustaining populations have subsequently established in southern New England and the Ohio Valley south to the Atlantic and Gulf coastal plains and west to the Mississippi Valley and Ozark Mountains of Missouri and Arkansas [[47](#),[56](#),[70](#),[82](#),[87](#),[102](#),[107](#),[129](#),[133](#)].

Japanese honeysuckle is widely planted across much of North America and frequently escapes cultivation. However, it is not usually invasive in areas outside the region described above [[47](#),[70](#),[96](#)]. It can be found from Maine to Florida and from Michigan and Wisconsin south to Nebraska, Kansas, Oklahoma, and Texas. It is not reported from New Hampshire. It also is reported in southern Ontario, Hawaii, and Puerto Rico, and as an occasional escapee in the southwestern United States [[40](#),[47](#),[51](#),[53](#),[56](#),[57](#),[60](#),[61](#),[70](#),[73](#),[82](#),[87](#),[92](#),[102](#),[105](#),[107](#),[119](#),[129](#),[133](#),[140](#),[141](#),[143](#)]. [Plants database](#) provides a map of Japanese honeysuckle's distribution in the United States. For further information regarding the ecological range of Japanese honeysuckle see [Site Characteristics](#).

The following biogeographic classification systems demonstrate where Japanese honeysuckle could potentially be found based on reported occurrence. Predicting distribution of nonnative species is problematic because of gaps in understanding of their biological and ecological characteristics, and because introduced species may still be expanding their range. These lists are speculative and may not be accurately restrictive or complete.

ECOSYSTEMS [[37](#)]:

FRES10 White-red-jack pine
 FRES11 Spruce-fir
 FRES12 Longleaf-slash pine
 FRES13 Loblolly-shortleaf pine
 FRES14 Oak-pine
 FRES15 Oak-hickory
 FRES16 Oak-gum-cypress
 FRES17 Elm-ash-cottonwood
 FRES18 Maple-beech-birch
 FRES19 Aspen-birch
 FRES20 Douglas-fir
 FRES24 Hemlock-Sitka spruce
 FRES26 Lodgepole pine
 FRES27 Redwood
 FRES28 Western hardwoods
 FRES34 Chaparral-mountain shrub
 FRES37 Mountain meadows
 FRES39 Prairie

STATES:

AL	AZ	AR	CA	CT	DE	FL	GA
HI	IL	IN	KS	KY	LA	ME	MD
MA	MI	MS	MO	NE	NV	NJ	NM
NY	NC	OH	OK	PA	RI	SC	TN
TX	UT	VT	VA	WV	WI	DC	PR
ON							

BLM PHYSIOGRAPHIC REGIONS [\[12\]](#):

3 Southern Pacific Border
 4 Sierra Mountains
 6 Upper Basin and Range
 7 Lower Basin and Range
 11 Southern Rocky Mountains
 12 Colorado Plateau
 13 Rocky Mountain Piedmont

KUCHLER [\[63\]](#) PLANT ASSOCIATIONS:

K001 Spruce-cedar-hemlock forest
 K002 Cedar-hemlock-Douglas-fir forest
 K006 Redwood forest
 K012 Douglas-fir forest
 K018 Pine-Douglas-fir forest
 K020 Spruce-fir-Douglas-fir forest
 K021 Southwestern spruce-fir forest
 K029 California mixed evergreen forest

K030 California oakwoods
K033 Chaparral
K082 Mosaic of K074 and K100
K083 Cedar glades
K084 Cross Timbers
K089 Black Belt
K095 Great Lakes pine forest
K098 Northern floodplain forest
K099 Maple-basswood forest
K100 Oak-hickory forest
K101 Elm-ash forest
K102 Beech-maple forest
K103 Mixed mesophytic forest
K104 Appalachian oak forest
K106 Northern hardwoods
K109 Transition between K104 and K106
K110 Northeastern oak-pine forest
K111 Oak-hickory-pine
K113 Southern floodplain forest
K114 Pocosin

SAF COVER TYPES [\[32\]](#):

16 Aspen
17 Pin cherry
19 Gray birch-red maple
20 White pine-northern red oak-red maple
21 Eastern white pine
22 White pine-hemlock
23 Eastern hemlock
25 Sugar maple-beech-yellow birch
26 Sugar maple-basswood
27 Sugar maple
28 Black cherry-maple
30 Red spruce-yellow birch
32 Red spruce
33 Red spruce-balsam fir
37 Northern white-cedar
39 Black ash-American elm-red maple
40 Post oak-blackjack oak
42 Bur oak
43 Bear oak
44 Chestnut oak
45 Pitch pine
46 Eastern redcedar
50 Black locust
51 White pine-chestnut oak
52 White oak-black oak-northern red oak
53 White oak
55 Northern red oak
57 Yellow-poplar
58 Yellow-poplar-eastern hemlock

59 Yellow-poplar-white oak-northern red oak
60 Beech-sugar maple
61 River birch-sycamore
62 Silver maple-American elm
63 Cottonwood
64 Sassafras-persimmon
65 Pin oak-sweetgum
70 Longleaf pine
71 Longleaf pine-scrub oak
72 Southern scrub oak
73 Southern redcedar
74 Cabbage palmetto
75 Shortleaf pine
76 Shortleaf pine-oak
78 Virginia pine-oak
79 Virginia pine
80 Loblolly pine-shortleaf pine
81 Loblolly pine
82 Loblolly pine-hardwood
83 Longleaf pine-slash pine
84 Slash pine
85 Slash pine-hardwood
87 Sweetgum-yellow-poplar
88 Willow oak-water oak-diamondleaf (laurel) oak
89 Live oak
91 Swamp chestnut oak-cherrybark oak
92 Sweetgum-willow oak
93 Sugarberry-American elm-green ash
94 Sycamore-sweetgum-American elm
95 Black willow
96 Overcup oak-water hickory
97 Atlantic white-cedar
108 Red maple
109 Hawthorn
110 Black oak
207 Red fir
210 Interior Douglas-fir
211 White fir
216 Blue spruce
217 Aspen
218 Lodgepole pine
222 Black cottonwood-willow
225 Western hemlock-Sitka spruce
229 Pacific Douglas-fir
230 Douglas-fir-western hemlock
231 Port-Orford-cedar
232 Redwood
233 Oregon white oak
234 Douglas-fir-tanoak-Pacific madrone
235 Cottonwood-willow
237 Interior ponderosa pine

- 240 Arizona cypress
- 243 Sierra Nevada mixed conifer
- 244 Pacific ponderosa pine-Douglas-fir
- 245 Pacific ponderosa pine
- 246 California black oak
- 247 Jeffrey pine
- 248 Knobcone pine
- 249 Canyon live oak
- 250 Blue oak-foothills pine
- 255 California coast live oak

SRM (RANGELAND) COVER TYPES [\[123\]](#):

- 201 Blue oak woodland
- 202 Coast live oak woodland
- 203 Riparian woodland
- 204 North coastal shrub
- 207 Scrub oak mixed chaparral
- 208 Ceanothus mixed chaparral
- 209 Montane shrubland
- 214 Coastal prairie
- 215 Valley grassland
- 216 Montane meadows
- 411 Aspen woodland
- 413 Gambel oak
- 418 Bigtooth maple
- 419 Bittercherry
- 420 Snowbrush
- 421 Chokecherry-serviceberry-rose
- 422 Riparian
- 503 Arizona chaparral
- 509 Transition between oak-juniper woodland and mahogany-oak association
- 731 Cross timbers-Oklahoma
- 732 Cross timbers-Texas (little bluestem-post oak)
- 801 Savanna
- 805 Riparian
- 809 Mixed hardwood and pine
- 810 Longleaf pine-turkey oak hills
- 812 North Florida flatwoods
- 815 Upland hardwood hammocks
- 817 Oak hammocks

HABITAT TYPES AND PLANT COMMUNITIES:

Japanese honeysuckle occurs in a variety of habitat types and plant communities throughout North American. It may be found within most plant associations of the southern and east-central United States. It occurs in oak (*Quercus* spp.)-pine (*Pinus* spp.) associations, northern white-cedar (*Thuja occidentalis*) stands, white (*P. strobus*), red (*P. resinosa*), pitch pine (*P. rigida*) stands, and mixed hardwood stands. It is rare in spruce (*Picea* spp.) and fir (*Abies* spp.) forest types and coastal pine barrens [\[57\]](#). Plant associations for Japanese honeysuckle in the more arid western United States are less clear. For more information regarding the ecological range of Japanese honeysuckle see [Site Characteristics](#) and [Successional Status](#).

The following are descriptions of plant community associations that include Japanese honeysuckle:

- Present in several plant community descriptions at Lincoln Boyhood National Memorial in southwestern Indiana, including old fields, abandoned homesites, bottomland successional forest, bottomland mature forest, and mixed maple-yellow-poplar (*Acer* spp.-*Liriodendron tulipifera*) forest [93]
- Present in the following forest types of California's Mendocino coast: xeric redwood (*Sequoia sempervirens*), mixed evergreen, inland ravine, and Sitka spruce-western hemlock (*Picea sitchensis*-*Tsuga heterophylla*)[144]
- Occurs in the shingle oak (*Q. imbricaria*) association in Maryland [18]
- Listed as a common associate in the live oak (*Q. virginiana*) forest type [50] and among common understory vegetation in the shortleaf pine (*Pinus echinata*) forest type of eastern North America [69]
- Part of the loblolly pine-black cherry/Japanese honeysuckle (*P. taeda*-*Prunus serotina*/*Lonicera japonica*) management/successional community type in the South Carolina Upper Coastal Plain. Loblolly pine-black cherry/Japanese honeysuckle is the early-seral stage of the blackjack oak/deerberry/broomsedge bluestem (*Q. marilandica*/*Vaccinium stamineum*/*Andropogon virginicus*) type, occurring on sub-xeric uplands, high ridge flats, and slight slopes on the Aiken Plateau [59]
- Listed among typical or disturbance-related species for the coastal plain marl outcrop, piedmont/low mountain alluvial forest, and upland depression swamp forest communities of North Carolina [120]
- Listed among typical species for the maritime shrub thicket community of South Carolina [86]

BOTANICAL AND ECOLOGICAL CHARACTERISTICS

SPECIES: *Lonicera japonica*

- [GENERAL BOTANICAL CHARACTERISTICS](#)
- [RAUNKIAER LIFE FORM](#)
- [REGENERATION PROCESSES](#)
- [SITE CHARACTERISTICS](#)
- [SUCCESSIONAL STATUS](#)
- [SEASONAL DEVELOPMENT](#)

GENERAL BOTANICAL CHARACTERISTICS:

Japanese honeysuckle is a nonnative, woody, trailing or twining, perennial vine [70,73,140]. Stems are often 0.4 to 2 inches (1-5 cm) in diameter, reaching 4 inches (10 cm) on older plants, and can grow to 18 feet (5.5 m) or more in length. Bark is corky and shredded on older stems, peeling readily [73,140,147]. Rooting depth is generally 6 to 12 inches (15-30 cm) on moist sites, and up to 40 inches (102 cm) on dry sites. Roots may extend laterally to 8.5 feet (2.5 meters) from the root crown [17].

Leaves of Japanese honeysuckle are 1 to 4.8 inches (2.5-12 cm) long by 0.6 to 2.4 inches (1.5-6.0 cm) wide [39,53,70,73,147]. Japanese honeysuckle is generally evergreen in the southern parts of its eastern North American range (Maryland southward), becoming increasingly deciduous to the north [39,70]. The relative deciduous/evergreen nature of Japanese honeysuckle in the western United States is not clear. It has been characterized as "half evergreen" in California [84].

Flowers of Japanese honeysuckle are in axillary pairs with corollas 0.6 to 2 inches (1.5-5 cm) long [53,73,147]. Fruits are sessile berries, 0.16 to 0.24 inch (4-6 mm) in diameter, with 2-5 seeds per fruit [30,44,89,98].

The preceding description provides characteristics of Japanese honeysuckle that may be relevant to fire ecology and is not meant to be used for identification. Keys for identifying Japanese honeysuckle are available (e.g. [82,119,129,148]), or see the [University of Missouri Agronomy Extension](#), [Illinois Nature Preserves Commission](#), and [The Nature Conservancy's Wildland Invasive Species](#) websites for photos and descriptive characteristics.

RAUNKIAER [103] LIFE FORM:

Phanerophyte

Chamaephyte

REGENERATION PROCESSES:

Breeding system: Japanese honeysuckle is [xenogamous](#) [67].

Pollination: Japanese honeysuckle is pollinated by insects and hummingbirds [70]. Research in Japan indicates flowers often do not open until dusk, probably as a strategy to conserve pollen for nocturnal hawkmoths. Hawkmoths consume only nectar and are more efficient pollinators than bees, which consume both nectar and pollen [81].

Sexual reproduction of Japanese honeysuckle may be pollinator-limited along the western edge of its range in eastern North America. Larson and others [67] found fruit set ranging from 0% to 36% in Arkansas and Oklahoma in naturally pollinated populations, while they were able to achieve 78.7% fruit set by hand pollination. Low pollinator visitation and inefficient pollinators were considered the likely cause of low fruit set. Nocturnal hawkmoths were observed visiting flowers late in the flowering season, and these secondary shoots produced significantly ($P = 0.014$) more fruit than earlier-blooming primary shoots.

Seed production:

Flowering and seed production are most prolific, and occur at an earlier age, when plants are in open habitats [42,70,90]. In eastern Texas, Japanese honeysuckle bore fruit at age 3 when plants were open-grown and at age 5 when shade-grown. In general, fruit production peaked when plants were 4 to 6 years old and declined considerably thereafter [42].

Seed dispersal:

Japanese honeysuckle seeds are frequently dispersed by frugivorous birds and small mammals [47,57,146]. Bird dispersal is typically by species that frequent brushy areas, thickets, and forest openings. Birds that frequent forest openings, for example, usually fly from 1 opening to another, depositing seeds at each roosting site. This means of seed dispersal generally ensures deposition in a habitat where the seedling has a high probability of success, such as beneath a sapling tree suitable for stem twining [47].

Seed banking:

Although there are no published studies examining Japanese honeysuckle seed banks, indirect evidence suggests a low potential for formation of persistent seed banks. Germination of most seeds appears to occur during the spring immediately following dispersal [70]. Seeds of Japanese honeysuckle germinated at similar rates when buried in soil and when placed under leaf litter [54]. More research examining seed longevity and potential for seed bank formation is needed.

Germination: Seeds require cold stratification for germination [54,70]. Dormancy was broken experimentally by stratification for 60 days in moist sphagnum at between 43 and 46 degrees Fahrenheit

(6.1-7.8 °C) [70]. Germination is significantly ($P < 0.05$) enhanced by exposure to light, although germination occurs under low light conditions [70,80].

Seedling establishment/growth:

Seedling establishment and growth are slow during the initial years of development in new populations [90]. Seedlings are susceptible to drought and shading. Establishment is limited by competition for moisture with prairie grasses and forbs at the western limits of Japanese honeysuckle's distribution in eastern North America [70]. Because seeds are small and contain limited stored carbohydrates, seedlings must begin photosynthesis soon after germination. For this reason, seedling establishment may be limited in areas such as dense grasslands, where ground-level light competition is intense and there are no structures for young honeysuckle stems to climb [47].

Once established, Japanese honeysuckle colonies can spread rapidly. Stems growing along the ground provide structure for new twining stems so that, even in the absence of other supporting vegetation, Japanese honeysuckle can form dense mats of monospecific vegetation up to 5 feet (1.5 m) deep [147]. Single plants may produce 30 feet (9 m) of stem per year [96]. Twining vines have been reported up to 49 feet (15 m) above the ground in New Zealand [147]. Japanese honeysuckle vines are unable to climb tree boles > 4 inches (10 cm) in diameter without the aid of trellises provided by bole-climbing vines such as grape (*Vitis* spp.) [101].

Asexual regeneration: Japanese honeysuckle sprouts from the root crown and [layers](#). Adventitious roots can occur at the nodes of trailing stems, or in response to stem cambium damage [40,47,70].

SITE CHARACTERISTICS:

Japanese honeysuckle occurs on a variety of sites within its North American range. It is most common locally in areas where it was previously planted for hedges, erosion control, wildlife habitat, or ornamental purposes [57].

Disturbance is an important site characteristic promoting the establishment and success of Japanese honeysuckle. It is capable of invading "openings" within a variety of sites in eastern North America, either by seedling germination or vegetative spread [70]. Japanese honeysuckle is most prolific at forest edges and in open areas, but can persist under a closed forest canopy [93]. It often invades forests where there is moderate disturbance of vertical structure, allowing more light into the understory. Overstory removal is not a necessary precondition for invasion, although Japanese honeysuckle biomass production is greatest where "vertical-structure disturbance" is greatest [134]. For more information regarding the invasive nature of Japanese honeysuckle see [Impacts](#).

Leatherman [70] characterized the distribution of "naturalized" Japanese honeysuckle in eastern North America as generally south of an isotherm where mean January temperature is 30 degrees Fahrenheit (-1° C), north of an isotherm where only 5% of January daily low temperatures are < 32 degrees Fahrenheit (0° C), and east of the 40-inch (1,016 mm) mean annual precipitation limit. Northern distribution is limited by a short growing season and late spring frosts that damage new growth [47,96]. Projected future climate change has led to speculation that Japanese honeysuckle may expand its northern range [111]. Southern distribution may be limited by mild winter temperatures that are insufficient for seed stratification. Japanese honeysuckle generally is not invasive in prairie or grassland sites [70].

Distribution of Japanese honeysuckle based on elevation is varied. In the northeastern United States (Pennsylvania, New York, and northward), it is rarely found above 1,200 feet (360 m). It grows at higher elevations in the southern Appalachians (observed at 5,000 feet (1,500 m) in North Carolina) and Ozarks (2,800 feet (840 m) in Arkansas) [70]. Japanese honeysuckle occurs between 4,500 and 7,000 feet (1,350-2,100 m) in New Mexico [73] and generally below 3,300 feet (1,000 m) in California [53].

Japanese honeysuckle occurs on a variety of soil types, but is "noticeably absent" on coarse sands and poor peat soils [57]. Distribution may be limited on xeric sites with coarse, well-drained, infertile soils on the southeastern coastal plain. It is likely that extensive areas of poorly drained soils contribute to the absence of invasive Japanese honeysuckle in southern Florida [70].

SUCCESSIONAL STATUS:

While Japanese honeysuckle is found within a variety of successional stages in eastern North America, it seems to occur in the greatest densities in early-successional habitats such as old fields and shrub thickets [108]. It can be found in, and sometimes dominates, abandoned agricultural fields in early stages of succession [62]. Japanese honeysuckle displayed the highest relative cover and greatest frequency of any plant species 10 years after hurricane-related debris avalanches in the Blue Ridge Mountains of Virginia [55]. It appears that Japanese honeysuckle benefits from a combination of available light and small-diameter vertical structure, conditions commonly found in recently disturbed habitats.

Despite its relative affinity for open habitats, Japanese honeysuckle also has the ability to spread extensively within mature forest, persisting for many years in the understory until disturbance creates a gap in the canopy. It occurs in the understory of old-growth red river bottom forests in the Southeast [121]. In the New Jersey piedmont, it can be found within old-growth oak forest, thought to be unburned and uncut for >250 years. Japanese honeysuckle rapidly invades gaps following the natural fall of very large, mature trees [66]. If present at the time of gap formation, it can respond with vigorous growth, potentially dominating understory strata [66,124].

Dense concentrations of Japanese honeysuckle can inhibit regeneration of woody forest species. This may lead to a "disturbance climax" where succession is altered and the community is maintained as a virtual Japanese honeysuckle monoculture [47]. Forest management activities that remove part or all of the overstory can enhance opportunities for Japanese honeysuckle, frequently at the expense of desirable native and/or commercial species. For example, Japanese honeysuckle production in southeastern forests is frequently stimulated by silvicultural thinning in mixed pine/hardwood stands [95].

The ability of Japanese honeysuckle to establish and persist in later-successional stages of various eastern forests partly depends upon its ability to tolerate shade. Japanese honeysuckle plants in eastern Texas showed signs of stress after 2 years' growth under 8% of ambient light. While new growth was initiated each spring, leaders would subsequently die back and a portion of the current leaf crop would abscise following maturation of the flush [13]. Other reports indicate a greater tolerance to shade than is indicated above. Japanese honeysuckle can reportedly survive substantial periods of "extreme shade," although growth is reduced [8,124]. Favorable conditions can occur in understory environments where carbon gain is enhanced by the utilization of ephemeral sunflecks [24,124]. Slezak [124] indicated that vigorous growth occurs under conditions of >3% of full sunlight. In a greenhouse experiment, Japanese honeysuckle had a light compensation point (the irradiance level where net photosynthesis = 0) of about 0.9% of full sunlight. Average survival rates were >60% at 2% of full sunlight and 100% at 3.5% of full sunlight. Biomass accumulation increased substantially within this range [8]. Newly established plants may be less shade tolerant than mature plants. The following table provides data concerning the shade tolerance of rooted cuttings grown outdoors in containers, with shade treatments using different layers of cheesecloth [70].

% of full sun	100	50	25	10	5
number of plants surviving (out of 10) after	7	8	8	5	1

160 days

More research is needed to help understand the role of shade tolerance, relative to other factors, in determining the ability of Japanese honeysuckle to establish, compete, and persist in forested habitats.

SEASONAL DEVELOPMENT:

Japanese honeysuckle often retains its leaves into winter, with abscission sometimes occurring after new leaves have fully developed in spring. The timing of abscission is probably related to climate and occurs earlier in the year in northern parts of its range. For example, leaves are retained through late March in the South Carolina coastal plain [112], but only until late December or January in Delaware [104]. In southern California leaves are shed in fall, or generally in response to drought [70]. New leaves form by mid-March in Maryland [47]. Germination occurs between early March and late April in eastern Tennessee [70]. The following table describes approximate flowering times reported from a variety of North American locations.

	March	April	May	June	July	August	September	October
Northeast [57]				X	X	X	X	
southern New England [119]			X	X	X	X	X	
West Virginia [129]			X	X	X			
southern Appalachians [148]		X	X	X				
Carolinas [102]		X	X	X				
Southeast [57]	X (occasional)	X	X	X	X	X	X	X (occasional)
Illinois [82]			X	X				
Arkansas [56]			X	X	X			
eastern Texas [42]		X (peak)						
New Mexico [73]				X	X	X		
California [84]		X	X	X	X	X		

Fruit ripens from late summer to late fall, depending on location, and persists into winter [42,70,102,132].

FIRE ECOLOGY

SPECIES: *Lonicera japonica*

- [FIRE ECOLOGY OR ADAPTATIONS](#)
- [POSTFIRE REGENERATION STRATEGY](#)

FIRE ECOLOGY OR ADAPTATIONS:

Fire adaptations:

Japanese honeysuckle survives fire by sprouting and rooting from stem tissue surviving within litter or upper soil layers [11,33]. Specific information about postfire regeneration is lacking, but published sources indicate that in general, Japanese honeysuckle sprouts from root crowns and roots from trailing stems [40,47,70,70].

Fire regimes:

Invasive populations of Japanese honeysuckle do not occur in communities with frequent, low-severity fire regimes such as in longleaf pine. Small scattered populations of Japanese honeysuckle may persist with frequent fire, presumably due to small fire refugia or continued recruitment from bird-dispersed seed [65].

In areas where fire suppression has diminished opportunities for maintenance of fire-seral communities, such as oak- or pine-dominated eastern forests, presence of Japanese honeysuckle may promote further recruitment of shade-tolerant species into the overstory. Japanese honeysuckle can suppress advance regeneration of shade intolerant and mid-tolerant species, and can outcompete seedlings and saplings following small-scale disturbance events that create canopy openings. Self-replacement of overstory species, already diminished by competition from fire-intolerant but shade-tolerant species such as maples (*Acer* spp.), may be inhibited even further by Japanese honeysuckle competition [124]. More research is needed that examines interactions between various fire regimes and Japanese honeysuckle invasion. In some cases, it seems likely that fire suppression may promote Japanese honeysuckle growth and further enhance the replacement of fire-seral species by shade-tolerant species.

The following table lists fire return intervals for communities or ecosystems throughout North America where Japanese honeysuckle may occur. This list is presented as a guideline to illustrate historic fire regimes and is not to be interpreted as a strict description of fire regimes for Japanese honeysuckle. For further information on fire regimes in these communities or ecosystems see the corresponding FEIS summary for the dominant taxa listed below.

Community or Ecosystem	Dominant Species	Fire Return Interval Range (years)
maple-beech-birch	<i>Acer-Fagus-Betula</i>	> 1000
silver maple-American elm	<i>A. saccharinum-Ulmus americana</i>	< 35 to 200
sugar maple	<i>A. saccharum</i>	> 1000
sugar maple-basswood	<i>A. saccharum-Tilia americana</i>	> 1000 [142]
California chaparral	<i>Adenostoma</i> and/or <i>Arctostaphylos</i> spp.	< 35 to < 100
California montane chaparral	<i>Ceanothus</i> and/or <i>Arctostaphylos</i> spp.	50-100 [94]
sugarberry-America elm-green ash	<i>Celtis laevigata-Ulmus americana-Fraxinus pennsylvanica</i>	< 35 to 200
Atlantic white-cedar	<i>Chamaecyparis thyoides</i>	35 to > 200 [142]
Arizona cypress	<i>Cupressus arizonica</i>	< 35 to 200 [94]
beech-sugar maple	<i>Fagus</i> spp.- <i>Acer saccharum</i>	> 1000
black ash	<i>Fraxinus nigra</i>	< 35 to 200 [142]
cedar glades	<i>Juniperus virginiana</i>	3-7 [94]

yellow-poplar	<i>Liriodendron tulipifera</i>	< 35 [142]
blue spruce*	<i>Picea pungens</i>	35-200 [5]
red spruce*	<i>P. rubens</i>	35-200 [28]
Rocky Mountain lodgepole pine*	<i>Pinus contorta</i> var. <i>latifolia</i>	25-300+ [4,5,110]
shortleaf pine	<i>P. echinata</i>	2-15
shortleaf pine-oak	<i>P. echinata-Quercus</i> spp.	< 10
slash pine	<i>P. elliotii</i>	3-8
slash pine-hardwood	<i>Pinus elliotii</i> -variable	< 35 [142]
longleaf-slash pine	<i>P. palustris-P. elliotii</i>	1-4 [85,142]
longleaf pine-scrub oak	<i>P. palustris-Quercus</i> spp.	6-10 [142]
Pacific ponderosa pine*	<i>P. ponderosa</i> var. <i>ponderosa</i>	1-47 [5]
interior ponderosa pine*	<i>P. ponderosa</i> var. <i>scopulorum</i>	2-30 [5,9,68]
Table Mountain pine	<i>P. pungens</i>	< 35 to 200 [142]
pitch pine	<i>P. rigida</i>	6-25 [19,52]
pocosin	<i>P. serotina</i>	3-8
pond pine	<i>P. serotina</i>	3-8
eastern white pine	<i>P. strobus</i>	35-200
eastern white pine-eastern hemlock	<i>P. strobus-Tsuga canadensis</i>	35-200
eastern white pine-northern red oak-red maple	<i>P. strobus-Q. rubra-Acer rubrum</i>	35-200
loblolly pine	<i>P. taeda</i>	3-8
loblolly-shortleaf pine	<i>P. taeda-P. echinata</i>	10 to < 35
Virginia pine	<i>P. virginiana</i>	10 to < 35
Virginia pine-oak	<i>P. virginiana-Quercus</i> spp.	10 to < 35
sycamore-sweetgum-American elm	<i>Platanus occidentalis-Liquidambar styraciflua-Ulmus americana</i>	< 35 to 200 [142]
eastern cottonwood	<i>Populus deltoides</i>	< 35 to 200 [94]
aspen-birch	<i>P. tremuloides-Betula papyrifera</i>	35-200 [28,142]
quaking aspen (west of the Great Plains)	<i>P. tremuloides</i>	7-120 [5,41,76]
black cherry-sugar maple	<i>Prunus serotina-Acer saccharum</i>	> 1000 [142]
Rocky Mountain Douglas-fir*	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	25-100 [5,6,7]
coastal Douglas-fir*	<i>P. menziesii</i> var. <i>menziesii</i>	40-240 [5,83,106]
California mixed evergreen	<i>P. menziesii</i> var. <i>m.-Lithocarpus densiflorus-Arbutus menziesii</i>	< 35
California oakwoods	<i>Quercus</i> spp.	< 35 [5]
oak-hickory	<i>Quercus-Carya</i> spp.	< 35

northeastern oak-pine	<i>Quercus-Pinus</i> spp.	10 to < 35
southeastern oak-pine	<i>Quercus-Pinus</i> spp.	< 10 [142]
coast live oak	<i>Q. agrifolia</i>	<35 to 200 [5]
white oak-black oak-northern red oak	<i>Q. alba-Q. velutina-Q. rubra</i>	< 35 [142]
canyon live oak	<i>Q. chrysolepis</i>	<35 to 200
blue oak-foothills pine	<i>Q. douglasii-Pinus sabiniana</i>	<35 [5]
northern pin oak	<i>Q. ellipsoidalis</i>	< 35
bear oak	<i>Q. ilicifolia</i>	< 35 > [142]
California black oak	<i>Q. kelloggii</i>	5-30 [94]
bur oak	<i>Q. macrocarpa</i>	< 10
chestnut oak	<i>Q. prinus</i>	3-8
northern red oak	<i>Q. rubra</i>	10 to < 35
post oak-blackjack oak	<i>Q. stellata-Q. marilandica</i>	< 10
black oak	<i>Q. velutina</i>	< 35
live oak	<i>Q. virginiana</i>	10 to< 100 [142]
cabbage palmetto-slash pine	<i>Sabal palmetto-P. elliotii</i>	< 10 [85,142]
redwood	<i>Sequoia sempervirens</i>	5-200 [5,34,131]
elm-ash-cottonwood	<i>Ulmus-Fraxinus-Populus</i> spp.	< 35 to 200 [28,142]

*fire return interval varies widely; trends in variation are noted in the species summary

FIRE EFFECTS

SPECIES: *Lonicera japonica*

- [IMMEDIATE FIRE EFFECT ON PLANT](#)
- [DISCUSSION AND QUALIFICATION OF FIRE EFFECT](#)
- [PLANT RESPONSE TO FIRE](#)
- [DISCUSSION AND QUALIFICATION OF PLANT RESPONSE](#)
- [FIRE MANAGEMENT CONSIDERATIONS](#)

IMMEDIATE FIRE EFFECT ON PLANT:

Japanese honeysuckle is top-killed by fire [[3,11,33](#)]. There are no published accounts of fire destroying entire plants.

Climbing Japanese honeysuckle can become ladder fuels. Fire may reach 15 feet (4.5 m) or more into the canopy on Japanese honeysuckle vines [[1](#)].

DISCUSSION AND QUALIFICATION OF FIRE EFFECT:

Damage to Japanese honeysuckle may be increased by fires coinciding with bud burst [[3](#)].

PLANT RESPONSE TO FIRE:

Japanese honeysuckle sprouts after damage from fire [[1,3,11,26,33](#)]. Specific information about postfire regeneration is lacking, but published sources indicate that in general, Japanese honeysuckle sprouts from root crowns and roots from trailing stems [[40,47,70,70](#)].

DISCUSSION AND QUALIFICATION OF PLANT RESPONSE:

While Japanese honeysuckle is top-killed by fire, postfire sprouting can lead to rapid recovery of preexisting colonies [[128](#)]. As of this writing (2002), published accounts of postfire recovery rates are lacking. However, it appears likely that postfire recovery may lead to Japanese honeysuckle levels that surpass prefire cover or biomass. Both fall and winter burns in northwestern Georgia significantly ($P < 0.05$) reduced Japanese honeysuckle biomass. However, sprouting from buds protected by unburned litter was evident as soon as 1 month following fire [[33](#)]. Despite considerable top-kill, postfire sprouting following 2 consecutive annual spring burns in a North Carolina shortleaf pine forest resulted in Japanese honeysuckle maintaining "its dominant status as a ground cover" [[11](#)]. Prescribed burning in the South Carolina Piedmont resulted in vigorous growth of Japanese honeysuckle, which had previously been "suppressed by litter" [[26](#)].

Although Japanese honeysuckle can sprout following fire, repeated burning may reduce its invasiveness [[1,3](#)]. At a longleaf pine site in southern Alabama, experimental plots were burned biennially in winter, spring, or summer over a 23-year period. After 23 years, Japanese honeysuckle occurrence was 16.05% for no burn, 0% for winter burning, 1.23% for spring burning, and 0% for summer burning treatments [[64](#)].

FIRE MANAGEMENT CONSIDERATIONS:

In fire-adapted communities, prescribed burning may be an effective means of controlling Japanese honeysuckle [[65,90](#)]. In a South Carolina coastal plain loblolly-longleaf pine flatwoods site, a single season of winter prescribed burning reduced Japanese honeysuckle cover to 2.7%, compared with 16.3% in unburned plots [[38](#)]. Japanese honeysuckle coverage and crown volume were reduced by 49 and 61%, respectively, following 3 years (out of 4) of spring prescribed burning in a North Carolina shortleaf pine forest. Grasses and forbs increased, shrubs decreased, and there was no effect on understory or overstory trees [[10](#)].

It is apparent, however, that 1 to 2 prescribed fires are unlikely to eradicate Japanese honeysuckle from a particular site [[23](#)]. Two consecutive spring burns in a North Carolina shortleaf pine forest significantly reduced ($P < 0.01$) Japanese honeysuckle crown volume by 86% after 1 burn and 80% ($P < 0.001$) after the 2nd burn. Similarly, ground coverage of Japanese honeysuckle was significantly ($P < 0.05$) reduced by 46% and 35% following each respective burn. While spring prescribed fire severely reduced the presence of climbing vines in forests with established Japanese honeysuckle populations in a North Carolina shortleaf pine forest, 2 consecutive burns were not sufficient to eradicate Japanese honeysuckle from the site. Some question remained regarding the ability of the remnant population to regain its previous biomass following cessation of prescribed burning, but Japanese honeysuckle ground cover appeared to be only temporarily constrained. It was further speculated that surviving Japanese honeysuckle could increase rapidly in response to subsequent canopy disturbance [[11](#)]. Anderson and Schwegman [[3](#)] conducted 2 consecutive spring burns in a southern Illinois hardwood forest that was heavily colonized by Japanese honeysuckle. Following the 1st burn, which was conducted in mid-March, Japanese honeysuckle cover was greatly reduced but its frequency was unchanged due to postfire sprouting. Following the 2nd burn, which was conducted in early April of the subsequent year, Japanese honeysuckle frequency was reduced by half. It was unclear whether the reduction in frequency, observed after the 2nd burn but not the 1st, was due to damage from repeated fire or because the 2nd burn occurred during a later phenological stage when proportionally more plant resources were destroyed by the fire. It was suggested that burning as late in spring as possible, but while most native plants remain dormant, might be most effective for controlling Japanese honeysuckle. Subsequent resampling at this site suggests that control of Japanese honeysuckle provided by prescribed fire is of short duration [[2](#)].

It is difficult to predict the frequency of prescribed fire required to control Japanese honeysuckle. Effective control will likely be influenced by the intensity of each burn and the favorability of the site for postfire

recovery of Japanese honeysuckle. It has been suggested that burning dense stands of Japanese honeysuckle at 5-year intervals may reduce its spread [127]. The historic fire regime for a particular site is likely to influence the appropriateness and effectiveness of proposed burn treatments. Mesic sites with fire intolerant native flora may not respond well to fire or may not provide suitable conditions to carry an effective burn. Conversely, sites that have experienced at least some periodic fire in the past and contain more fire-tolerant native plant communities are better suited for using prescribed fire as a control method for Japanese honeysuckle.

Use of prescribed fire to control Japanese honeysuckle, while potentially effective, requires long-term commitment. Cessation of prescribed fire treatments, even after multiple consecutive or near-consecutive years of burning, often leads to reinvasion. Fire was excluded from a southern Illinois barren remnant for 11 years following spring prescribed burns in 4 of 5 prior years. Despite a decrease in frequency following the fires, and increasing shade during fire suppression years, Japanese honeysuckle frequency was nearly 4 times preburn levels by postfire year 11 [114].

Mitigative measures such as mechanical or herbicide treatments may be required to minimize potential for undesirable fire effects such as crown fire, particularly where fire has been excluded. Fire can follow twining vines to heights of at least 15 feet (4.5 m), providing ladder fuels and the potential for crown fire [1].

A combination of prescribed fire and herbicide application may be effective for Japanese honeysuckle control. Spot application of herbicides to postfire sprouts often enhances control [90]. Combining herbicide treatment with late fall or winter prescribed fire, when most native species are dormant and potential off-target effects can be minimized, may be particularly useful [88]. A combination of herbicide (picloram + triclopyr), followed 2 months later by prescribed fire, was tested as a site preparation in a recently harvested loblolly pine stand in the Georgia Piedmont. Japanese honeysuckle presence was sharply reduced when measured 1 year later (present on 14% of treatment sample plots vs. 90% of control sample plots). Treatment effects were relatively short lived, however, as presence of Japanese honeysuckle in treatment plots increased to 52% (compared with 98% for control plots) after 3 years [16]. For more information regarding the use of herbicides for control of Japanese honeysuckle see [Chemical control](#).

MANAGEMENT CONSIDERATIONS

SPECIES: *Lonicera japonica*

- [IMPORTANCE TO LIVESTOCK AND WILDLIFE](#)
- [OTHER USES](#)
- [IMPACTS AND CONTROL](#)

IMPORTANCE TO LIVESTOCK AND WILDLIFE:

Japanese honeysuckle is an important browse species for white-tailed deer throughout much of the eastern and southern United States, especially during poor mast years and in winter when other food sources are scarce or inaccessible [43,49,79,87,109,116,125]. It is particularly important for white-tailed deer in the South. Japanese honeysuckle is considered a "choice" woody browse species for white-tailed deer on the Oconee National Forest in the Georgia Piedmont [48]. In areas of northern Alabama managed primarily for loblolly pine production, Japanese honeysuckle constituted 49.4% of the year-round diet of white-tailed deer. No other single food item amounted to >6% [122]. Cultivation and fertilization of Japanese honeysuckle food plots may provide winter forage for white-tailed deer in the southeastern United States [116,130], although such practices have been discouraged [117].

In eastern forests, wild turkeys, northern bobwhite, and various songbirds utilize Japanese honeysuckle as

food, particularly during winter when other food may be scarce [45,56,79,126]. Its persistent leaves shield fruit from sleet when other food is glazed with ice [45]. Wood thrushes, hermit thrushes, tufted titmice, dark-eyed juncos, eastern bluebirds, purple finches, pine grosbeaks, American robins, white-throated sparrows, and yellow-rumped warblers consume fruits [46,56,96,97,132]. Japanese honeysuckle also provides excellent forage for rabbits [79]. Ruby-throated hummingbirds feed from the flowers [126].

Palatability/nutritional value:

Caloric value of fruits has been measured at 4,419 cal/g [20] and 374 Calories/pulp of 1 fruit [98].

Nutritional value and palatability of leaves remain relatively high throughout winter [14].

The following table provides some nutritional information for Japanese honeysuckle taken from cultivated white-tailed deer food plots in northern Arkansas. Data are leaves / twigs [109].

	Summer	Fall	Winter	Spring
crude protein (% dry weight)	12 / 5	14 / 5.5	13 / 5	16 / 7.5
calcium (% dry weight)	1.6* / 0.45	1.3 / 0.55	1.5* / 0.7*	1.4* / 0.6*
phosphorus (% dry weight)	0.22 / 0.19	0.245 / 0.115	0.205 / 0.095	0.22 / 0.15
dry matter digestibility (%)	89.5 / 40.5	89.5 / 33.5	91.5 / 34	91 / 51

All values are the average of data from 2 consecutive seasons except where noted (*), which are a single season.

The following table provides some nutritional information for Japanese honeysuckle leaves grown under 3 different light levels in eastern Texas¹. While leaf nutrient concentrations generally increased with shading, digestibility diminished with decreased light intensity [14].

	% Shade	April	May	June	July	August	September	December
Crude Protein ²	0	12c	10c	9c	9c	9c	8c	10c
	55	19b	15b	15b	14b	15b	15b	17b
	92	21a	18a	17a	16a	17a	18a	18a
Phosphorus ³	0	0.21b	0.14b	0.12b	0.14b	0.15b	0.12b	0.13c
	55	0.34a	0.28a	0.25a	0.26a	0.24a	0.24a	0.22b
	92	0.34a	.026a	0.26a	0.29a	0.29a	0.30a	0.29a
Calcium ³	0	0.65b	0.84b	0.95b	0.94b	1.01b	1.04b	1.06b
	55	0.78b	0.86b	0.88b	0.86b	0.91b	0.96b	0.99b
	92	1.18a	1.24a	1.27a	1.26a	1.25a	1.25a	1.28a
Acid-Detergent Fiber ³	0	18c	18c	22c	23c	23c	22c	19c
	55	23b	24b	27b	28b	27b	26b	24b
	92	30a	31a	34a	35a	35a	35a	35a
Apparent	0	3130a	3150a	2960a	2950a	2920a	3090a	3090a
	55	2640b	2700b	2450b	2340b	2290b	2490b	2580b

Digestible Energy ⁴	92	1760c	1900c	1920c	1570c	1610c	1550c	1630c
In Vivo Dry-Matter Digestibility ³	0	69a	70a	65a	66a	65a	67a	66a
	55	58b	59b	54b	51b	51b	55b	55b
	92	39c	43c	42c	35c	36c	35c	37c

¹ Values associated with shade intensities for each species and month combination followed by a common letter do not differ statistically ($p < 0.05$).

² % of fresh tissue

³ % of oven-dry matter

⁴ calories/g

Cover value:

Japanese honeysuckle thickets provide cover for eastern cottontails, northern bobwhite, wild turkeys, and songbirds [45,79]. Northern bobwhite nest in Japanese honeysuckle thickets in southern Illinois [29].

Japanese honeysuckle thickets may provide bedding cover for white-tailed deer [87], and good habitat for cotton rats [15].

OTHER USES:

Japanese honeysuckle was promoted for many years as a horticulture plant [96], and is still sold for this purpose in many areas. It has been used as a fast-growing plant for rehabilitation of disturbed, erodible ground [47,70]. Several constituents of Japanese honeysuckle have shown anti-inflammatory activity comparable to aspirin [71].

IMPACTS AND CONTROL:

Impacts: Japanese honeysuckle directly impacts native plants through competition for light [47,134] and soil resources [27,145]. Twining vines grow up and past small-diameter trees and shrubs, blocking sunlight with their dense canopy and eventually pulling down their dead hosts with the weight of the vine [47,56,74]. Twining Japanese honeysuckle vines may increase stem:leaf ratios of host plants, presumably because the extra weight exerted on the host plant requires greater stem support than would otherwise be required [35].

Japanese honeysuckle may also impact native communities by altering forest structure and species composition. Invasion of Japanese honeysuckle in eastern forests can lead to suppressed reproduction of herbs and woody plants. Although the ground layer is most suppressed, plants of nearly all forest strata begin growth at the ground layer and are hence subject to suppression. Presence of Japanese honeysuckle and its effects upon understory regeneration could promote dramatic changes in forest structure. American elm (*Ulmus americana*), black cherry, and yellow-poplar on a Potomac River island in Washington D.C were particularly susceptible to suppressed regeneration due to shading from Japanese honeysuckle [134]. Japanese honeysuckle constrains oak regeneration in southeastern hardwood bottoms, especially following overstory thinning or removal [36,150,151]. It can also substantially inhibit pine regeneration in harvested stands when it is present prior to harvest. Presence of Japanese honeysuckle vines in harvestable stands may require substantial expense and effort to ensure pine regeneration [21,47,75].

Japanese honeysuckle retains photosynthetically active foliage during winter throughout much of its range. This trait, combined with ability to produce new leaves in early spring, enhances its competitive ability, and hence, its invasiveness. In many areas, Japanese honeysuckle can produce as much as 2 months of growth before most deciduous associates begin to grow. For example, in Maryland Japanese honeysuckle usually leafs out by mid-March, while the native oak forests are generally leafless until May [47,112]. However,

Japanese honeysuckle becomes less invasive in northern portions of its eastern North American range due to a shorter growing season and frequent winter kill of accumulated stem growth [40,57,70]. In the arid western United States, Japanese honeysuckle is not likely to become widely invasive due to drought intolerance, especially of seedlings. However, it may persist in irrigated or riparian areas, becoming a localized pest [70].

Competitive ability and invasiveness of Japanese honeysuckle may be aided by its exceptional morphological plasticity. Japanese honeysuckle was compared with the native trumpet honeysuckle (*Lonicera sempervirens*), a sympatric, twining honeysuckle also found in the southeastern United States. Shoot growth of both species was examined with and without climbing supports. Japanese honeysuckle responded to the presence of climbing supports with a 15.3% decrease in internode length, a doubling of internode number, and a 43% increase in shoot biomass. In contrast, trumpet honeysuckle showed no influence of climbing supports on internode length or shoot biomass, and only a 25% increase in internode number [115].

Another trait that may enable Japanese honeysuckle's invasiveness is its ability to spread rapidly by both vegetative and sexual means. It readily sprouts from the root crown, especially in response to stem damage. Additionally, new individuals are established when plants put down roots at nodes along stems, forming new root crowns and spawning new plants. Heavy fruit-bearing colonies can rapidly disperse seed throughout a wide area by attracting frugivorous birds [47].

While Japanese honeysuckle was promoted and planted as a beneficial wildlife species in the eastern United States during the mid 1900s, emphasis has now changed toward controlling its spread [57]. Japanese honeysuckle does provide food for wildlife, but it also suppresses many native plants that may be of greater economic or ecological value [47].

Japanese honeysuckle is one of several invasive exotic plant species considered a "significant management concern" in Shenandoah National Park, Virginia, and is a "widely reported problem species" in federal wilderness areas in Alabama, Arkansas, and Kentucky [72]. Japanese honeysuckle may threaten the rare *Trillium pusillum* in southern Tennessee, a state endangered plant. Japanese honeysuckle impacts native forest forbs by outcompeting them for light following release due to opening of canopy gaps [30].

Japanese honeysuckle is an important early and late-season host for the important agricultural pests tobacco budworm and corn earworm in southern Georgia and northern Florida [91].

Control:

Controlling Japanese honeysuckle may require determined, protracted effort. Because it readily sprouts in response to cambium damage, single treatments are unlikely to eradicate established plants. Persistence of invasive Japanese honeysuckle will vary with site, duration of establishment, and control methods employed, and may be difficult to predict.

In areas where invasive Japanese honeysuckle suppresses populations of rare native plant species, control efforts may require careful consideration. While control efforts may be motivated by conservation objectives, treatments such as herbicide application or prescribed burning could have adverse effects on threatened or endangered species [30].

Prevention:

Because Japanese honeysuckle seed may be widely dispersed by birds and other animals, periodic monitoring of susceptible habitats, and subsequent removal of detected invaders, can prevent establishment of dense, intractable colonies. The semi-evergreen nature of Japanese honeysuckle may present a competitive advantage over native deciduous plants, but it does allow easier detection of invasive populations during winter [90].

Integrated management:

Integrated management represents a systems approach to control of invasive species. It typically involves a variety of control methods, often used in combination, with the choice, sequence, and timing of treatments chosen to minimize the target's weaknesses while maximizing control effectiveness. Integrated management calls for detailed understanding of the ecology and life history of the target species, as well as the desired native community, and relies on planning, monitoring and data-gathering [31]. The control methods outlined in this section provide information relevant to developing integrated management strategies for controlling Japanese honeysuckle in North America. Evans and Heitlinger [31] provide a detailed review of integrated management in natural areas.

Physical/mechanical: Mechanical treatments can suppress invasive Japanese honeysuckle, but plants will sprout in response to cambium damage. Mechanical control is likely to be effective only if it is perpetuated for a relatively long time, or if temporary suppression is the goal. In open areas, Japanese honeysuckle may be controlled by repeated mowing [30]. Mowing reduces the spread of vegetative stems but may not completely eradicate entire populations. Mowing reduces average stem length, but increases numbers of genets [90]. At an Arkansas timber harvest site where invasive vines were present prior to harvest, disking provided suppression of Japanese honeysuckle sufficient to ensure natural regeneration of loblolly pine seedlings. "Bushhogging" was not an effective site preparation for natural pine regeneration, but planted seedlings were able to establish and compete after 2 years [75]. Combining mechanical treatments with 1 or more additional methods such as prescribed burning or herbicides may enhance effectiveness, but there are no published accounts of such efforts.

Hand-pulling mature plants is difficult due to extensive root systems, but seedlings (< 2 years old) can be eradicated in this manner [30]. Hand-pulling at an old field site in southwestern Indiana resulted in good control of Japanese honeysuckle and release of many native forbs and grasses, but was very labor-intensive [93].

Fire: See [Fire Management Considerations](#).

Biological: No information

Grazing/Browsing: Browsing livestock can reduce Japanese honeysuckle vegetative growth, especially over multiple seasons. Browsing is unlikely to provide complete eradication [17,90].

Chemical:

Herbicides may control Japanese honeysuckle, especially when used in combination with other methods. It is unlikely that Japanese honeysuckle can be eliminated with a single herbicide treatment [22,99,100]. Spot application of herbicides may be effective as a follow-up to prescribed burning, which can substantially reduce aboveground biomass (see [Fire Management Considerations](#)) [90].

Some research indicates that herbicide application prior to the first hard freeze (25 degrees Fahrenheit (-3.9 °C)) is most effective [90], while other studies indicate delaying treatment until early winter may still be effective with some chemicals [104]. Because Japanese honeysuckle retains its leaves during the dormant season of most native deciduous plants, spraying foliar-absorbed herbicides during this period reduces off-target effects [90]. Care should be taken when using chemicals that may harm nontarget plants, since these plants will be important in recolonizing the site after Japanese honeysuckle is controlled [90,93].

Below is a list of herbicides that have been tested and judged effective for controlling Japanese honeysuckle in North America. For more information regarding appropriate use of herbicides against invasive plant species in natural areas, see The Nature Conservancy's [Weed Control Methods Handbook](#) as well as TNC's [Wildland Invasive Species Team](#) web page. For more information specific to herbicide use against Japanese honeysuckle, see [Illinois Nature](#)

[Preserves' Vegetation Management Guideline](#) and [The Nature Conservancy's Element Stewardship Abstract](#) web pages.

Picloram [[99](#)]

Hexazinone [[77](#)]

Glyphosate [[74,90,104,113](#)]

Amitrole [[74,152](#)]

Metsulfuron [[36,150](#)]

Triclopyr + 2,4-D [[90](#)]

Cultural: No information

Lonicera japonica: References

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