TIPPC Plant Assessment Form

For use with "Criteria for Categorizing Invasive Non-Native Plants that Threaten Wildlands"
by the California Invasive Plant Council and the Southwest Vegetation Management Association

Version February 2003, modified July 2009 for the Texas Invasive Plant & Pest Council – www.texasinvasives.org

Table 1. Species and Evaluator Information

Species name (Latin binomial)**:**	Ligustrum lucidum
Synonyms:	
Common names:	Glossy privet
Evaluation date (mm/dd/yy)**:**	4/15/2011
Evaluator #1 Name/Title:	Travis Gallo/Ecologist
Affiliation:	The Lady Bird Johnson Wildflower Center
Phone numbers:	512-232-0116
Email address:	tgallo@wildflower.org
Address:	4801 La Crosse Ave., Austin, Texas 78739
Evaluator #2 Name/Title:	enter text here
Affiliation:	enter text here
Phone numbers:	enter text here
Email address:	enter text here
Address:	enter text here

Section below for list committee use—please leave blank

List committee members:	enter text here
Committee review date:	enter text here
List date:	enter text here
Re-evaluation date(s):	enter text here

General comments on this assessment:
enter text here

This species was originally assessed for the City of Austin Invasive Species Management Plan

Table 2. Criteria, Section, and Overall Scores

Species: enter text here

Region: enter text here

1.1	Impact on abiotic ecosystem processes	C	4
1.2	Impact on plant community	A	4
1.3	Impact on higher trophic levels	A	3
1.4	Impact on genetic integrity	U	No Information

Impact

Enter four characters from Q1.1-1.4 below:

CAAU

Using matrix, determine score and enter below:

A

2.1	Role of anthropogenic and natural disturbance	A	4
2.2	Local rate of spread with no management	A	3
2.3	Recent trend in total area infested within state	B	2
2.4	Innate reproductive potential Wksht A	A	4
2.5	Potential for human-caused dispersal	A	3
2.6	Potential for natural long-distance dispersal	A	4
2.7	Other regions invaded	B	4

Invasiveness

Enter the sum total of all points for Q2.1-2.7 below:

19

Use matrix to determine score and enter below:

A

3.1	Ecological amplitude/Range	A	3
3.2	Distribution/Peak frequency Wksht C	A	3

Distribution

Using matrix, determine score and enter below:

A

Plant Score

Using matrix, determine Overall Score and Alert Status from the three section scores and enter below:

High

No Alert

Documentation

Average of all questions

3.41

Table 3. Documentation (List all references at end of PAF. Short citations may be used in Table 3.)

Impacts

Question 1.1 Impact on abiotic ecosystem processes C Rev'd Sci. Pub'n back

Identify ecosystem processes impacted:

Leaves of a similar species, *L. sinense,* have been reported to impact on aquatic macro invertebrates through chemicals released. The species does occur in riparian areas, and could have some impact on water quality by changing light levels and nutrient imputes. There has been however no quantifiable reports of this species impacting upon water quality.

Sources of information:

Llewellyn DC (2005) Effect of toxic riparian weeds on the survival of aquatic invertebrates. *Australian Zoologist* **33**, 194-209.

Question 1.2 Impact on plant community composition, structure, and interactions A Rev'd Sci. Pub'n back

Identify type of impact or alteration: Glossy privet forms large, almost single-species stands that have become one of the main vegetation cover types in Argentina. Has invaded most southern forest creating a monoculture and eliminating understory growth. In Texas stands of L. lucidum can dominate (>75%) (Gallo, observational)

Sources of information:

Gallo, observational

Hoyos, L., G. I. Gavier Pizarro, T. Kuemmerle, E. H. Bucher, V. C. Radeloff, and P. Tecco. 2010. Invasion of glossy privet (Ligustrum lucidum) and native forest loss in the Sierra Chicas of Córdoba, Argentina. Biological Invasions 12:3261–3275.

Miller, J.H. (2003) Nonnative invasive plants of southern forests: a field guide for identification and control. Gen.Tech. Rep. SRS-62. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 93 p.

Muyt A. 2001. *Bush Invaders of South-East Australia*. R.G & F.J.Richardson, Meredith.

Question 1.3 Impact on higher trophic levels A Other Pub. Mat'l back

Identify type of impact or alteration: Invasion in and reduction in nesting and foraging sites, cover, and other critical resources (i.e., native species habitat) for the endangered Golden-cheeked warbler in central Texas (source). Introduced urban landscape plants such as privets (Ligustrum spp) have invaded limestone canyons of Comal, Hays, Travis and Williamson counties in central Texas. These introduced plants invade rich, diverse slope woodlands, blocking sunlight from reaching the floor and outcompeting native species, such as bracted twistflower.

Sources of information:

Poole, J.M, W.R. Carr, D.M. Price, J.R. Singhurst. 2008. Rare Plants of Texas: A Field Guide. Texas A&M University Press.

Question 1.4 Impact on genetic integrity	U No Information back
Identify impacts: No known hybridization with native species	
Sources of information: Observational, Gallo	

Invasiveness

Question 2.1 Role of anthropogenic and natural disturbance in establishment	A Rev'd Sci. Pub'n back
Describe role of disturbance: Ligustrum lucidum can establish in lowland and upland forest without any disturbance.	
Sources of information: enter text here Gurvich, D.E., P.A. Tecco, and S. Diaz. 2005. Plant invasions in undisturbed ecosystems: The triggering attribute approach. Journal of Vegetation Science 16:6. Miller, J.H. (2003) Nonnative invasive plants of southern forests: a field guide for identification and control. Gen.Tech. Rep. SRS-62. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 93 p.	
Question 2.2 Local rate of spread with no management	A Other Pub. Mat'l back
Describe rate of spread: Spreads very rapidly. In central Texas, L. lucidum can double in <10 years with no management.	
Sources of information: Marjan Kluepfel, HGIC Information Specialist, and Bob Polomski, Extension Consumer Horticulturist, Clemson University. Observational, Gallo	
Question 2.3 Recent trend in total area infested within state	B Observational back
Describe trend: Local infestations are increasing, but L. lucidum seems to have invaded every ecoregion it can.	
Sources of information: Observational, Gallo	
Question 2.4 Innate reproductive potential	A Rev'd Sci. Pub'n back
Describe key reproductive characteristics: Reaches maturity level in 4 years (Swarbick, 1999) [0 points], produces approx. 6900 seeds per stem (Panetta, 2000). Large trees have been reported to be capable of producing more than a million seeds a year (Swarbick, 1999) [2 points], produces seeds every year (Panetta, 2000) [1 point], seed production sustained over 3 months (Swarbick, 1999) [1 point], seeds remain viable less than 1 year (Swarbick, 1999) [0 points], unknown if cross pollinate and self -pollinate [0 points] (Swarbick, 1999). Has quick spreading roots[1 point], does not easily fragment and establish elsewhere[0 points], but does resprout readily when cut, burned, or grazed [1 point] (Miller, 2003). Total 6 points.	
Sources of information: Miller, J.H. (2003) Nonnative invasive plants of southern forests: a field guide for identification and control. Gen.Tech. Rep. SRS-62. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research	

Station. 93 p.

Panetta, F.D. 2000. Fates of fruits and seeds of *Ligustrum lucidum* W.T.Ait. and *L. sinense* Lour. maintained under natural rainfall or irrigation. Austrailian Journal of Botany 48 (6): 701-705.

Swarbrick, J. T., Timmins, S. M. and Bullen, K. 1999. The biology of Australian weeds. 36. Ligustrum lucidum Aiton and Ligustrum sinense Lour. *Plant Protection Quarterly*, *14* 4: 122-130.

Westoby, M.; Dalby, J.; Adams-Acton, L. 1983. Fruit production by two species of privet, Ligustrum sinense Lour. and L. lucidum W.T. Ait., in Sydney. Australian Weeds, 2 4: 127-129.

Question 2.5 Potential for human-caused dispersal A Other Pub. Mat'l back

Identify dispersal mechanisms: Commonly planted as ornamental and sold in nursery trade. Promoted for windbreaks and drought tolerant landscaping.

Sources of information: enter text here

Miller, J.H. (2003) Nonnative invasive plants of southern forests: a field guide for identification and control. Gen.Tech. Rep. SRS-62. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 93 p.

Welch, W.C. LANDSCAPING FOR ENERGY CONSERVATION. Texas Agricultural Extension Service. Accessed 19 April 2011: http://aggie-horticulture.tamu.edu/extension/homelandscape/energy/energy.html

Question 2.6 Potential for natural long-distance dispersal A Rev'd Sci. Pub'n back

Identify dispersal mechanisms: Berries are readily eaten by birds

Sources of information: enter text here

Ferreras, A.E. and L. Galetto. 2008. Fruit removal of an invasive exotic species (*Ligustrum lucidum*) in a fragmented landscape. Journal of Arid Environments 72 (9): 1573-1580

Miller, J.H. (2003) Nonnative invasive plants of southern forests: a field guide for identification and control. Gen.Tech. Rep. SRS-62. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 93 p.

Muyt A. 2001. *Bush Invaders of South-East Australia*. R.G & F.J.Richardson, Meredith.

Australian/New Zealand Weed Risk Assessment adapted for Hawai'i.Research directed by C. Daehler (UH Botany) with funding from the Kaulunani Urban Forestry Program and US Forest Service.

Question 2.7 Other regions invaded B Rev'd Sci. Pub'n back

Identify other regions: Is known to invade montane dry forest in Argentina similar to Texas montane region.

Sources of information:

Ferreras, A.E. and L. Galetto. 2008. Fruit removal of an invasive exotic species (*Ligustrum lucidum*) in a fragmented landscape. Journal of Arid Environments 72 (9): 1573-1580

Distribution

Question 3.1 Ecological amplitude/Range A Other Pub. Mat'l back

Describe ecological amplitude, identifying date of source information and approximate date of introduction to

the state, if known: enter text here

Refer to Worksheet B

Sources of information: enter text here

Invaders of Texas Citizen Science Program (Accessed 9 May 2011: http://texasinvasives.org/observations/search.php?satellite=&sn=LILU2&cn=).

USDA PLANTS Database (Accessed 9 May 2011: http://plants.usda.gov/java/county?state_name=Texas&statefips=48&symbol=LILU2).

Question 3.2 Distribution/Peak frequency A Other Pub. Mat'l back

Describe distribution: enter text here

Refer to Worksheet B

Sources of information: enter text here

Invaders of Texas Citizen Science Program (Accessed 9 May 2011: http://texasinvasives.org/observations/search.php?satellite=&sn=LILU2&cn=).

USDA PLANTS Database (Accessed 9 May 2011: http://plants.usda.gov/java/county?state_name=Texas&statefips=48&symbol=LILU2).

References

List full citations for all references used in the PAF (short citations such as DiTomaso and Healy 2007 may be used in table above). **Websites** should include the name of the organization and the date accessed. **Personal communications** should include the affiliation of the person providing the observation. Enter each reference on a separate line; the table will expand as needed.

Examples:

Mitich, L. W. 1995. Intriguing world of weeds: Tansy ragwort. Weed Technology. 9: 402-404.

HEAR. Date unknown. Emex spinosa. Hawaiian Ecosystems at Risk. www.hear.org/pier/species/emex_spinosa.htm. Accessed March 17, 2009

DiTomaso, J. M. Personal communication from Dr. Joe DiTomaso, Dept. of Plant Science, UC Davis. Email received 3/17/09.

enter text here

Worksheet A

Reaches reproductive maturity in 2 years or less	**No**
Dense infestations produce >1,000 viable seed per square meter	**Yes**
Populations of this species produce seeds every year.	**Yes**
Seed production sustained over 3 or more months within a population annually	**Yes**
Seeds remain viable in soil for three or more years	**No**
Viable seed produced with *both* self-pollination and cross-pollination	**Unknown**
Has quickly spreading vegetative structures (rhizomes, roots, etc.) that may root at nodes	**Yes**
Fragments easily and fragments can become established elsewhere	**No**
Resprouts readily when cut, grazed, or burned	**Yes**
	6 1
	6

Note any related traits: enter text here

Notes for Worksheet B - Texas Ecoregions

Question 3.1

Ecological amplitude

Refer to the worksheet and select the one letter below that indicates the number of different ecological types that this species invades in your state.

A. Widespread—the species invades at least three Level III ecoregions **or** at least 22 Level IV ecoregions.
B. Moderate—the species invades two Level III ecoregions 8 Level IV ecoregions.
C. Limited—the species invades only one Level III ecoregion **and** two to six Level IV ecoregions.
D. Narrow—the species invades only one Level IV ecoregion.
U. Unknown.

Worksheet B - Texas Ecoregions (Griffen et al, 2004).

* A. means >50% of type occurrences are invaded; B means >20% to 50%; C. means >5% to 20%; D. means present but ≤5%; U. means unknown

Code	Level III	Level IV	Score
ER01	**Arizona/New Mexico Mountains**	Chihuahuan Desert Slopes	
		Montane Woodlands	
ER02	**Chihuahuan Deserts**	Chihuahuan Basins and Playas	
		Chihuahuan Desert Grasslands	
		Low Mountains and Bajadas	
		Chihuahuan Montane Woodlands	
		Stockton Plateau	
ER03	**High Plains**	Rolling Sand Plains	
		Canadian/Cimarron High Plains	
		Llano Estacado	
		Shinnery Sands	
		Arid Llano Estacado	
ER04	**Southwestern Tablelands**	Canadian/Cimarron Breaks	
		Flat Tablelands and Valleys	
		Caprock Canyons, Badlands, and Breaks	
		Semiarid Canadian Breaks	
ER05	**Central Great Plains**	Red Prairie	
		Broken Red Plains	
		Limestone Plains	
ER06	**Cross Timbers**	Eastern Crosstimbers	A
		Western Crosstimbers	
		Grand Prairie	A
		Limestone Cut Plain	A
		Carbonate Cross Timbers	
ER07	**Edwards Plateau**	Edwards Plateau Woodland	
		Llano Uplift	A
		Balcones Canyonlands	A
		Semiarid Edwards Plateau	
ER08	**Southern Texas Plains**	Northern Nueces Alluvial Plains	
		Semiarid Edwards Bajadas	
		Texas-Tamaulipan Thornscrub	
		Rio Grande Floodplain and Terraces	
ER09	**Texas Blackland Prairies**	Northern Blackland Prairies	A
		Southern Blackland/Fayette Prairie	
		Floodplains and Low Terraces	
ER10	**East Central Texas Plains**	Northern Post Oak Savanna	C
		Southern Post Oak Savanna	
		San Antonio Prairie	
		Northern Prairie Outliers	
		Bastrop Lost Pines	
		Floodplains and Low Terraces	
ER11	**Western Gulf Coastal Plain**	Northern Humid Gulf Coastal Prairies	B
		Southern Subhumid Gulf Coastal Prairies	
		Floodplains and Low Terraces	
		Coastal Sand Plain	
		Lower Rio Grande Valley	
		Lower Rio Grande Alluvial Floodplain	
		Texas-Louisiana Coastal Marshes	
		Mid-Coast Barrier Islands and Coastal Marshes	
		Laguna Madre Barrier Islands and Coastal Marshes	
ER12	**South Central Plains**	Tertiary Uplands	A
		Floodplains and Low Terraces	
		Pleistocene Fluvial Terraces	
		Southern Tertiary Uplands	A
		Flatwoods	A

		Red River Bottomland	