



# Invasives

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Newsletter of the Asia-Pacific Forest Invasive Species Network (APFISN)

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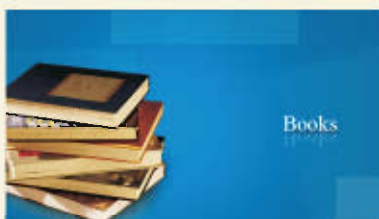
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## About APFISN

The Asia-Pacific Forest Invasive Species Network (APFISN) has been established as a response to the immense costs and dangers posed by invasive species to the sustainable management of forests in the Asia-Pacific region. APFISN is a cooperative alliance of the 33 member countries in the Asia-Pacific Forestry Commission (APFC) - a statutory body of the Food and Agriculture Organization of the United Nations (FAO). The network focuses on inter-country cooperation that helps to detect, prevent, monitor, eradicate and/or control forest invasive species in the Asia-Pacific region. Specific objectives of the network are: 1) raise awareness of invasive species throughout the Asia-Pacific region; 2) define and develop organizational structures; 3) build capacity within member countries; and 4) develop and share databases and information.



Salt Cedar (*Tamarix ramosissima*)

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INVASIVES, the Newsletter of the Asia-Pacific Forest Invasive Species Network (APFISN) is intended to share information among countries in the Asia-Pacific region on Forest Invasive Species (FIS) and the threats they pose in the region. If you have any items of news value on FIS to share between national focal points of APFISN and more widely among foresters, agriculturists, quarantine personnel and policy makers, please pass them on to the editor - Dr. T. V. Sajeev, APFISN Coordinator, Kerala Forest Research Institute, Peechi-680 653, Kerala, India (tvsajeev@gmail.com). This newsletter is supported by the Food and Agriculture Organization of the United Nations (FAO) and USDA Forest Service.





## Salt Cedar (*Tamarix ramosissima*)



*Tamarix ramosissima*, commonly called salt cedar, is native to Asia and Europe. It is an aggressive ornamental shrub and is a major invasive plant in the southwestern United States and the desert regions of California, consuming large amounts of groundwater in riparian and oasis habitats. The mature plants secrete salt from their stems and leaves that form a crust above and below ground which inhibits the growth of other plants. *Tamarix* drastically alters the habitat and food web, depletes water sources and increases erosion. It can produce roots from buried or submerged stems or stem fragments. This allows the species to produce new plants vegetatively, after floods, from stems torn from the parent plants and buried by sediment. The Global Invasive Species Database ranks *Tamarix* among the top 100 of the world's worst invaders. The seeds have no endosperm and a single seed may weigh about 0.00001 gram. *Tamarix* is reported to occur in Australia, China, Democratic People's Republic of Korea, Mongolia, Pakistan, Republic of Korea, Russian Federation, and the United States.

*Tamarix* is a shrub or small tree with reddish or reddish-brown bark. The leaves are alternate, bright green, sessile, ovate or deltoid cordate, 0.2-0.5 x 0.1-

0.2 cm, acute, sub-amplexicaul. Inflorescence occurs both in summer and spring; summer generates densely compound racemes, but in spring they are simple, loose, 1-7 x 3-5 cm, with peduncles 0.2-1 cm. Bracts are ovate, trullate, triangular, 1.5-2 mm long, 0.5 mm wide, acute, acuminate, with a denticulate margin especially in their lower parts; the pedicel is very small, 0.5 mm long. Flowers are pink to pinkish-purple, rarely white; the fruit capsule is trigonous, 4-5 x 0.75-1 mm, dehiscent along three longitudinal slits; seeds are less than 0.5 mm long with a tuft of 2 mm hairs at one end.

The plant invades agricultural areas, coastlands, disturbed areas, urban areas and watercourses. It grows well in damp places, especially on saline and alkaline soils.

The plant is an ecological as well as an environmental problem because it can degrade natural ecosystems by





altering their physical and chemical properties. It is an aggressive colonizer and can form dense monotypic stands, replacing native flora. *Tamarix* consumes huge amounts of water, which causes water stress to native vegetation by lowering the water table. The plant also causes flooding as its extensive root system can choke streambeds. It impacts wildlife by diminishing food sources.

*Tamarix* is often used as an ornamental plant and to prevent soil erosion. Other uses include furniture-making, as fuelwood and for tannin extraction.

Hand-pulling can be used to remove small plants. Aerial application of Imazapyr in combination with glyphosate has been reported to be an effective control method. Treatment of cut stumps with triclopyr is also useful in controlling the weed. Grazing by cattle also help to control the plant. The salt cedar leaf beetle (*Diorhabda elongata* [Brulle] *sensu lato*) is an effective biocontrol agent.

## News

### Are non native species more widespread in distribution than natives?

A new study from the University of Massachusetts reveals that the distribution of non native species are much more widespread than natives by assessing 13 000 native and non native plants across continental United States. According to Bethany Bradley, the team leader of the study, ecologists typically think that the invasive species are introduced into one spot and gradually spread, but it seems that even species with only a handful of occurrences were distributed all across the U.S. According to them, one of the major hurdles is the unpredictability of how species ranges could shift according to climate change. This comparative analysis shows that native plants are more limited in their distribution than non native plants, probably due to the difficulty in moving to suitable climates.

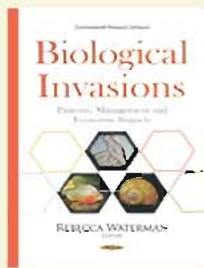
For more reading: <http://www.sciencedaily.com/releases/2015/01/150120085609.htm>

## New publications

- DeDecker, J.J., Masiunas, J. B., Davis, A.S. and C.G. Flint. 2014. Weed Management Practice Selection Among Midwest U.S. Organic Growers. **Weed Science**, 62:520 - 531.
- Groom, S.V.C., Hien T. Ngo, H.T., Rehan, S.M., Posa Skelton, P., Stevens, M.I. and M.P. Schwarz. 2014. Multiple recent introductions of aphid bees into Pacific archipelagos signify potentially large consequences for both agriculture and indigenous ecosystems. **Biological Invasions**, 16: 2293 – 2302.
- Houser, J.D. Ginsberg, H. and E.M. Jakob. 2014. Competition between introduced and native spiders (Araneae: Linyphiidae). **Biological Invasions**, 16: 2479 -2488.
- Iacona, G.D., Price, F.D. and P.R. Armsworth. 2014. Predicting the invadedness of protected areas. **Diversity and Distributions**, 20: 430 - 439.
- Murray, J.V., Berman, D.M. and R.D. Van Klinken. 2014. Predictive modelling to aid the regional-scale management of a vertebrate pest. **Biological Invasions**, 16: 2403 – 2425.



## Books



**Biological invasions: patterns, management and economic impacts:** Ed. **Rebecca Waterman**, Nova Science Pub Inc, 2015. Alien, also called non-indigenous or non-native, species are defined as those species that colonize an area beyond their natural range, where they reproduce and establish a population. It is known that plants, animals and microorganisms have been intentionally transferred with human discovery voyages for centuries and possibly since the shift from foraging to agricultural and pastoralist societies. As a result, many 'exotic' species are now among our preferred foods, dearest pets, good-looking houseplants and decorative aquarium weeds, but most of them cannot be considered alien species, as they grow well only in artificially-controlled conditions or in protected environments. Conversely, alien species are capable of ready acclimation to novel habitats, where they may find themselves unconstrained by the limiting factors—abiotic and biotic—typical of their original habitat. In these 'favourable' conditions, they might outgrow, and ultimately overthrow, resident organisms with which they happen to compete: in this case, alien species are often dubbed 'invasive'. This book discusses the patterns, management and economic impact of these biological invasions.

## Future events



**23-26 June 2015. 17<sup>th</sup> European weed research society symposium, “Weed management in changing environments”, Montpellier, France.** The programme will provide valuable information and networking opportunities for participants to discuss research, education and applied aspects related to weeds and weed management. Contact: [ewrs2015@dijon.inra.fr](mailto:ewrs2015@dijon.inra.fr)

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