

# Cross Pollination



## Climate Change and Assisted Migration

(As per CBC “The Current”)

by Patty King

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Anthony Ricciardi, Associate Professor Biodiversity, McGill University

As gardeners we are, knowingly or not, involved in an act called Assisted Migration. It is definitely a 21st century term and it is defined as, “Movement of species beyond their historical range either to prevent extinction due to climate change ... or facilitate their adaptation to future or projected climate change”, according to Nicole Klenk, a social scientist at the University of Waterloo. While gardeners of all types from all ages have always coveted what their neighbours had and we did not, we have transported plant and animal species from one country to another, over land and sea, in order to revel in and admire a new discovery, and to own one for ourselves. Today however we are doing this for different reasons, namely the continued survival of plant and animals species, and we are calling it Assisted Migration.

Scientists have been studying climate change for a couple of decades now and are now seeing the ties to the loss of animal and plant habitats. As areas of the earth are warming or cooling we are finding that some species are finding it

difficult to adapt to the changes and are therefore at risk. There has been a slow movement by groups and individuals alike to protect the species we love by moving them to locations where they hope they will continue to survive for years to come.

There are two cases of assisted migration in the news which involve moving a species far from its local habitat. The first is a conifer in Florida, *Torreya taxifolia*, with a shrinking range in the Florida panhandle. The group Citizens of *Torreya Taxifolia* Guardians are planting seeds of *Torreya taxifolia* from private stock or garden centres outside of its northern range in North Carolina. A second example was headed by Richard Branson of the Virgin Group who wanted to move Madagascar lemurs onto an island that he owns. The plan was to move animals from zoos or private organizations with the intent to protect the species. Conservation scientists criticised him for potentially creating risks to other species on the island. These examples are of citizens making choices

on their own (which may be ill informed) and without any government and academic oversight. The concern is that these types of assisted migration may cause more harm by changing native ecosystems. However these actions are also presently perfectly legal.

The philosophy of what we are doing concerns Anthony Ricciardi an Associate professor and invasive species biologist at McGill University. He is not opposed to assisted migration or what he calls assisted range expansion, but the intentional moving of species, such as moving animals to another island. We have a long history of moving plants and animals around the world and have caused some degree of ecological damage by degrading habitat, introducing diseases and pests, and the extinction of native species. Do these long distance introductions such as moving certain plants or animals outweigh the risks of ecological damage? Mr. Ricciardi claims there are no reliable ways to forecast the risks of a species introduction. There are risks with assisted migration such as creating new invasive species, the effect on the local



**Torrey taxifora**

ecosystem and the interaction with local species. He says we need to deal with the root cause rather than moving species around.

British Columbia is presently a world leader in a large scale experiment of assisted migration. They

are moving 15 tree species (of commercial value) to the northern edge of their range with the intent to study their adaptation to future climate change. They are hoping to develop a seed bank that will be successful in providing trees adapted to a more northern

range. To determine success we must wait 15 to 20 years and expect that up to 50% of those seedlings will not survive.

Professor Sally Aitken in Vancouver, a Forest Geneticist at University of British Columbia, is working on an experiment to save the white bark pine. The white bark pine is listed as threatened in Canada and is in rapid decline in western Canada and USA due to white pine blister rust, the mountain pine beetle, and loss of habitat. This pine has many positive ecological ties to the ecosystem that scientists consider it worth trying to save. As part of a controlled experiment they are moving it by seed within its existing range, to north of its

range and in places where it is not expected to survive in BC. The only risk is increased invasion of the white pine, but since it is a slow growing and moving tree the risk is very small, as well, the ecosystem the pines are planted in is already part of its regional flora.

How can we mitigate the impact of carbon emissions on ecosystems? While this is a controversial and difficult problem to solve, we are attempting different ways of dealing with it by assisted migration taken in tiny steps as with the tree studies, and in large steps with the removal of species to areas outside their natural range. Some will argue we need to be working on the root cause. Who is right?

<http://www.cbc.ca/thecurrent/episode/2012/10/19/the-ethical-implications-of-assisted-migration/>

## Events

### 1. Toronto Tech Update

January 12 2013, 8:30 -3:30  
Water Wise Gardening.  
Registration and flyer:  
<http://xa.yimg.com/kq/groups/79771514/1976416977/name/Tech+Update+Flyer+2013-2.pdf>

### 2. PHS Philadelphia International Flower Show

March 2 - 10, 2013  
Showcasing British horticulture in their 2013 show entitled "Brilliant"

Tickets are available :  
General Admission - \$27  
<http://www.theflowershow.com/home/index.html>

### 3. Roads Scholar is offering a multi-day package and tour of the Philadelphia International Flower Show, Barnes Foundation, Longwood and Winterthur gardens. <http://www.roadsscholar.org/n/program/summary.aspx?id=1-5RD307>

## *Wanted: Speakers*

### *for Halton Master Gardener Meetings*

#### Request from the Program Committee

Please reflect on any good speaker experiences and give us suggestions for the 2013 meetings, including any special topics of interest.

Names and contact numbers or emails of speakers would be helpful. If anyone is planning to present at Canada Blooms or the like, and would like to share their

presentations or have a "dry run" at our meeting, that would be great. Please let me know at the November meeting or email me at Roberta:

[robertsjr@globalserve.net](mailto:robertsjr@globalserve.net)

## Did you know...

That Master Gardeners of Ontario is a registered non-profit charity? Well it's true, and we would like to encourage you to think about Master Gardeners when you are considering where to make your charitable (or in memoriam) donations. Master Gardeners of Ontario needs about \$40,000 annually to properly run our provincial organization and strengthen our services to members, and we only collect about \$20,000 in annual dues from members. One way you can help is to make a tax credited, charitable donation. It's easy – go to [www.mastergardeners.ca](http://www.mastergardeners.ca) and use the CanadaHelps button. It's a safe and secure way to make an online donation and you'll be receipted immediately. Thank you for your support!

Or, you can mail a cheque directly to Wendy Fletcher, 8 Melrose Ave, Grimsby, ON, L3M 1G8 with directions to forward funds to the Halton club and you will receive a tax receipt.

# *A Jewel in the Crown?*

*By Donna Parker*

A little bit of India in the Cotswolds? I wasn't sure what to expect--a bit of kitsch; a jarring out of place folly? I have always felt that gardens should represent a sense of place so it was with some skepticism that I visited Sezincote House and Gardens in the Cotswolds.

Built in 1810 by Charles Cockerell and an architect friend, Sezincote was a recreation of the Mogul-style of architecture he had come to love while working in India. The home itself, complete with a central dome, minarets, orangeries and pavilions, sits comfortably amidst a sumptuous Persian Gar-



den of Paradise with its fountains and canals. Further out, secret gardens emerge in the dells featuring pools, waterfalls, a grotto and a shrine to the Hindu Sun God.



At its far reaches the estate reflects the Landscape Park style of English gardening made prominent by Gertrude Jekyll and Edwin Lutyens. Beautifully situated specimen trees and romantic gardens emerge over the gently rolling landscape to create a natural painting.



A jewel in the crown of English gardens? Most definitely! Although the architecture is, at first, a startling change from the traditional English rural landscape, the estate creates its own sense of place and harmony with its surroundings. While reflecting England's history and fascination with India it creates a present-day oasis of stunning beauty and peace. It's a hidden gem and well worth a visit. For more information: [www.sezincote.co.uk](http://www.sezincote.co.uk)

## Hydrangeas Fact Sheet:

By Claudette Sims

### General cultural information

#### Location

- morning sun and some dappled shade in the afternoon
- sheltered from wind, with snow accumulation in winter or mulch to protect flower buds
- avoid plantings against light-coloured south or west-facing wall
- moist, not wet soil

#### Protection (for mopheads and lacecaps)

- protect buds from cold and late spring freezes by covering with 15 cm of mulch (leaves, straw) after plants have gone dormant in late fall
- remove winter mulch after all threat of late spring frosts has passed
- be aware that mopheads and lacecaps may not be hardy enough for buds to winter over and therefore may not flower ('Endless Summer' is a hardier mophead.)

#### Watering

- water well and less often to encourage deeper roots
- mulch in summer to keep soil moist and cool

#### Feeding

- low-nitrogen, high-phosphorus fertilizer e.g. "10-40-10"
- too much nitrogen will result in vigorous vegetative growth but little or no flowering
- fertilize often in the first year to promote establishment of a healthy root system



*Hydrangea macrophylla*



*Hydrangea serrata*



*Hydrangea quercifolia*



*Hydrangea paniculata*



*Hydrangea arborescens*

| Hydrangea type<br><i>Botanical name</i>  | How to identify   | Pruning   | Blooming & hardiness  |
|--|---|---|---|
| <p>Mophead<br/><i>Hydrangea macrophylla</i></p> <p><u>Common varieties</u><br/>'Endless Summer'<br/>'Nikko Blue'</p>                             | <p><u>Blooms</u> pink, purple, or blue in July<br/><u>Leaves</u> relatively thick and crisp, somewhat shiny edges are coarsely toothed<br/>Leaf stems (petiole) are short &amp; leaves close to the main stems in most cases<br/>cuneate leaf base- leaf stalk attaches to the leaf, shaped like the bottom of a "V"<br/>Often bought in bloom from florist or grocery store (not very hardy)</p> | <p>Prune soon after flowers are finished to allow formation of new buds<br/>To keep the plant vigorous, selectively prune out the dead and weaker stems, both old and new<br/>'Endless Summer' will bloom on new wood, but it may take longer for flower buds to develop on the new growth of a young plant</p> | <p>bloom on second-year wood<br/>buds often die back over winter if growth is killed in spring frosts<br/>Buds and wood are hardy to zone 6, roots are hardier to zone 5<br/>'Endless Summer' is a bit hardier to zone 4 but not reliable</p> |
| <p>Lacecap<br/><i>Hydrangea serrata</i></p>  | <p><u>Blooms</u> Blue or pink blooms in July may stray into mauves and near white flat clusters with large blooms around the outer edge and lacy, tiny flowers in the center<br/><u>Leaves</u> Same as mophead<br/>Often bought in bloom from florist or grocery store (not very hardy)</p>   | <p>Prune soon after flowers are finished to allow formation of new buds<br/>To keep the plant vigorous, selectively prune out the dead and weaker stems, both old and new</p>   | <p>bloom on second-year wood<br/>buds often die back over winter or the emerging tip growth is killed in spring frosts<br/>Zone 6</p>   |
| <p>Oakleaf hydrangea<br/><i>Hydrangea quercifolia</i></p> <p><u>Common varieties</u><br/>'Snowflake'</p>   | <p><u>Blooms</u> White blooms in June-July many turn pink as they age<br/>cone-shaped clusters<br/><u>Leaves</u> lobed like oak leaves.<br/>twigs and tip bud are coated in light brown felt.</p>   | <p>Prune soon after flowers are finished to allow formation of new buds<br/>To keep the plant vigorous, selectively prune out the dead and weaker stems, both old and new</p>   | <p>bloom on second-year wood<br/>buds must survive a winter to complete flower bud formation<br/>Reliable bloom in warmer parts of Zone 5</p>   |
| <p>Panicle/PG/ PeeGee<br/><i>Hydrangea paniculata</i></p> <p><u>Common varieties</u><br/>'Limelight'</p>   | <p><u>Blooms</u> White flowers that may age to pink, August to fall<br/>can be round or cone-shaped<br/><u>Leaves</u> smaller, thinner, and rougher than other hydrangeas</p>   | <p>fall, winter, or spring<br/>not necessary to prune them every year<br/>trim out crossing branches, dead wood<br/>maintain it as a 5' shrub by pruning it to the ground each spring or allow it to grow into a single- or multi-stemmed, tree-like 12' specimen</p>   | <p>Blooms on new wood<br/>flowers each year even if cut to the ground that spring<br/>Hardy to zone 3</p>   |
| <p>Snowball<br/><i>Hydrangea arborescens</i></p> <p><u>Common varieties</u><br/>'Annabelle', 'Invincible Spirit'<br/>'Bounty', 'Incrediball'</p> | <p><u>Blooms</u> Large white globes in July<br/><u>Leaves</u> leaf stems (petiole) are long and hold the leaf away from the main stem.</p>  | <p>flowers each year in summer even if cut to the ground that spring<br/>prune by removing some older branches to the ground and cutting others back to shape the plant</p>   | <p>Blooms on new wood<br/>Hardy to Zone 3</p>   |