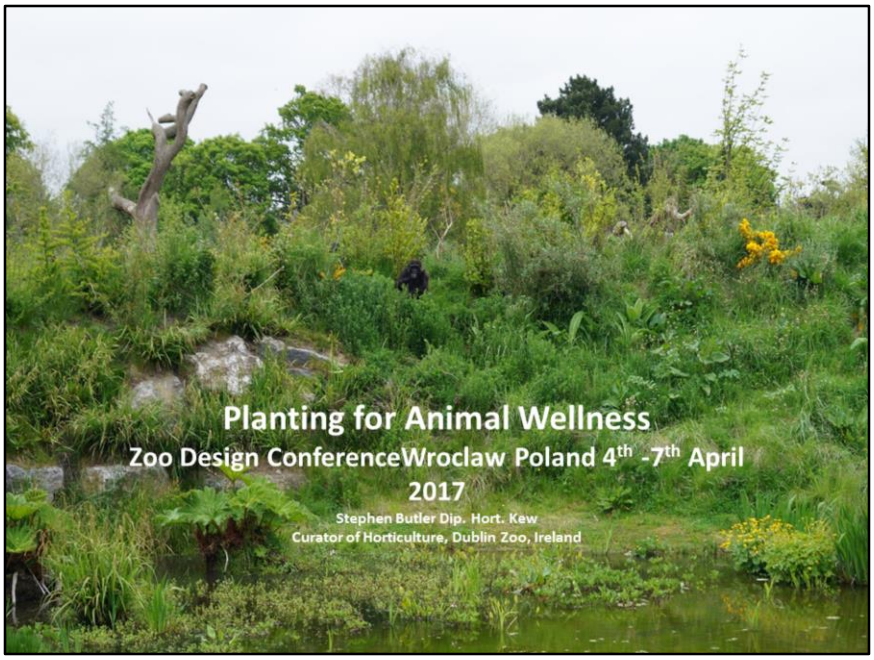
Planting for Animal Wellness
Zoo Design ConferenceWroclaw Poland 4th -7th April 2017
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Planting for Gorilla Rainforest

- Our design philosophy, developed in discussion with Grant Jones, has several ideals we try to follow, within a biogeographic master plan.
- REALISM – we aimed to make the vegetation a mix of trees and shrubs, and tall herbaceous plants, in a varied landscape of ridges and depressions that the gorillas can move around in, hide from each other or visitors, and forage for natural food or scatter feeding from keepers.
- HABITAT (LANDSCAPE) IMMERSION – visitor trail has many dense tall herbaceous plants, giving varied colour and leaf shapes, with large leaved trees dotted throughout. Some purple leaved plants used to give a unique feel here – not used anywhere else within any other biogeographic themed areas.
- ANIMAL WELLNESS – the varied landscape gave us great mixed planting opportunities, basic meadow mix and grass, and many herbaceous plants too, some edible, which the gorillas spend much time looking for and harvesting. Density of planting means the gorillas spend a lot of time looking for well hidden scatter feeds.

Western Lowland Gorilla planting – approx. 200 species, 5000 plants, plus seed – cost E40,000 (topsoil and plants)

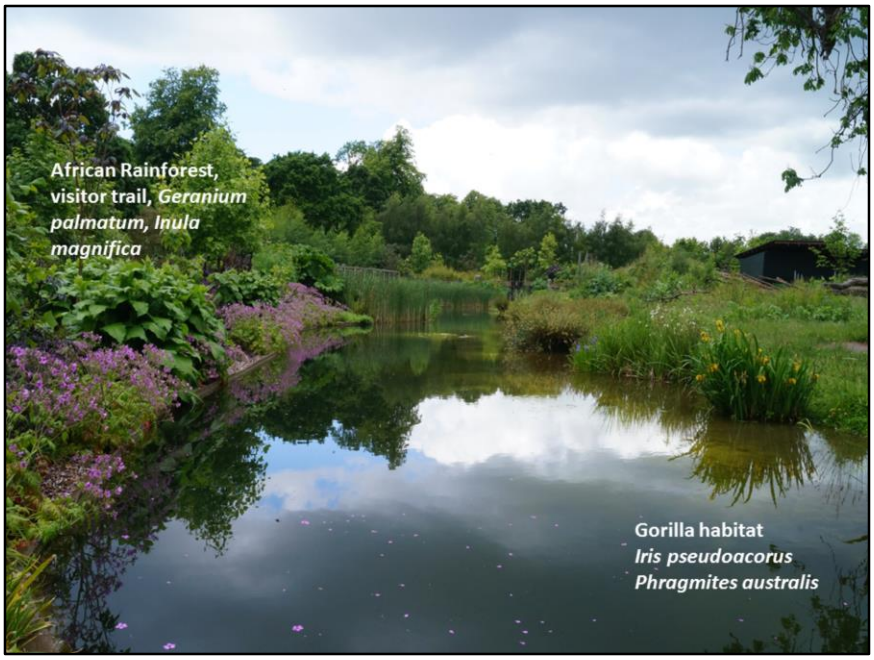
Edible plants – standard turf grasses including RTF Rhizomatous Tall Fescue, and a hay meadow mix, with some pockets of known preferred forage plants, clover *Trifolium*, plantain *Plantago*, dandelion *Taraxacum*, comfrey *Symphytum*, knotweed *Fallopia*, chicory *Cichorium*

Non edible – hopefully – plants used, bitter *Salix purpurea,* laurel *Prunus laurocerasus,* marsh marigold *Caltha* and yellow flag *Iris pseudoacorus* or *Pterocarya fraxinifolia*, scented *Choisya, Laurus,* and *Salvia*, thick leaved *Griselinia*, thorny *Berberis*, *Rosa*, *Pyracantha*

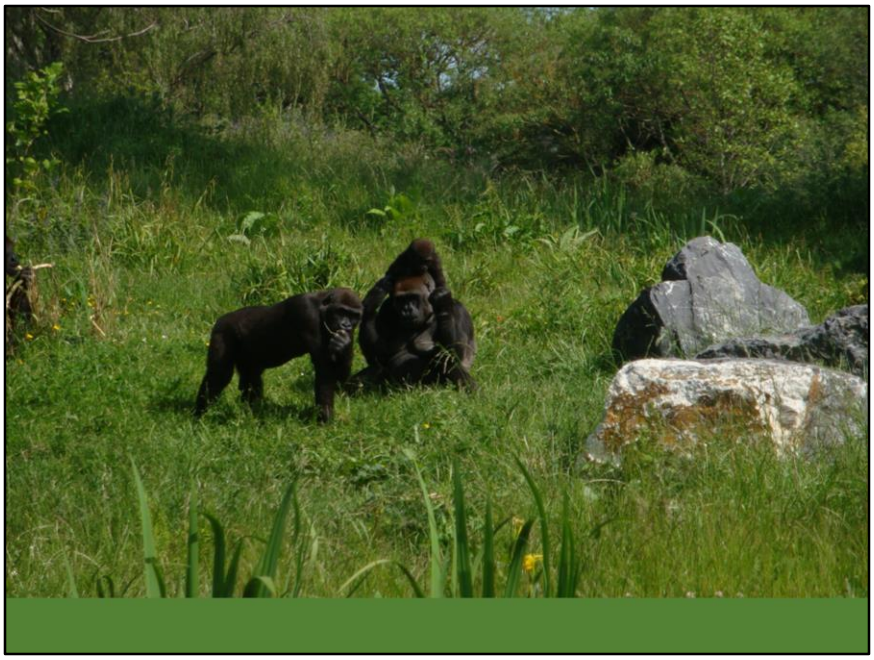
Many others – *Cynara, Gunnera, Populus* cvs, *Fraxinus, Liriodendron*

www.zooplants.net used as plant information resource, and emails within EAZA Zoohorticulture Group, plus referring to plant poison information, books and web, and using lists of plants not eaten by deer or rabbits

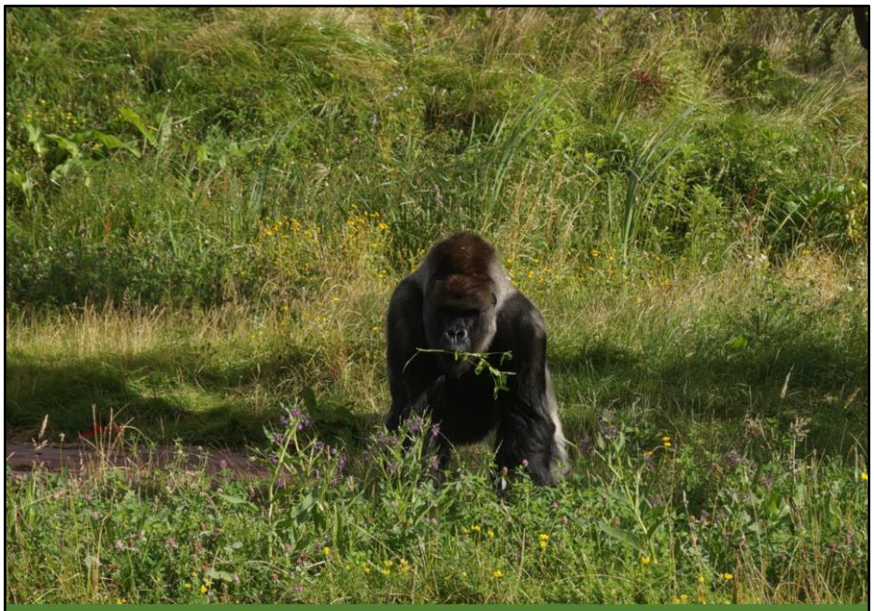
Moat deep on visitor side, sloped on gorilla side, with heavy plastic mesh to assist gorillas if they enter water. Dense planting hides most mesh, some waterfowl damage has caused gaps that we have not bothered to fill, expecting plants to spread.



Visitor side planting varies with season, always some colour, many tall herbaceous plants, height of plants allows for viewing but not everywhere.



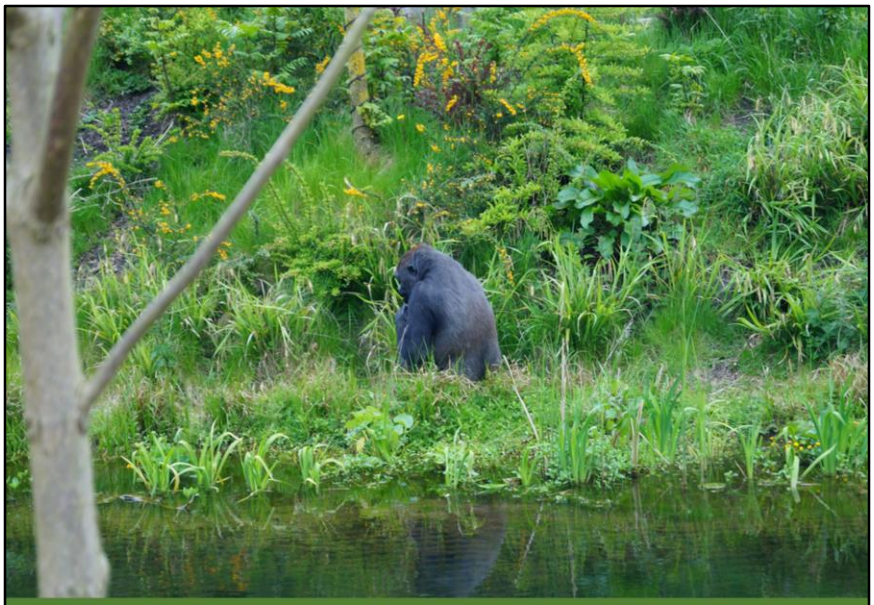
Gorillas actively seek out edible plants, but many were new to them and had to be tried first. Seen jumping over new plants to avoid contact. With many plants it took a year before they realised they were good to eat.



After 12 months Clover *Trifolium* proved very popular

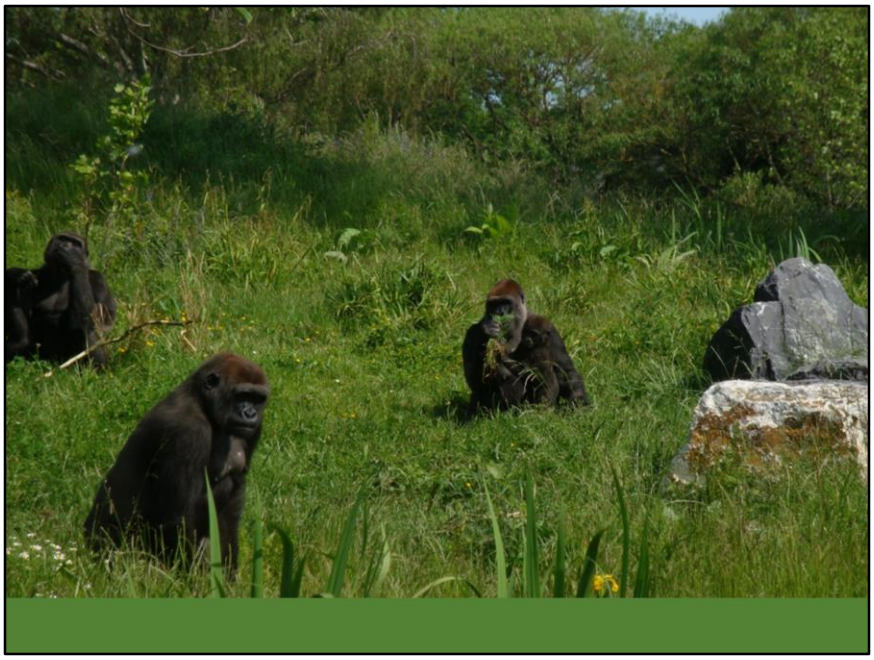
Gorillas regularly seek out edible plants, often seen lifting large leaved plants out of the way to look underneath for anything edible – scatter feed given daily of course

Once tried, some plants became favourites, armfuls of clover *Trifolium* would be taken in to their house each night while available

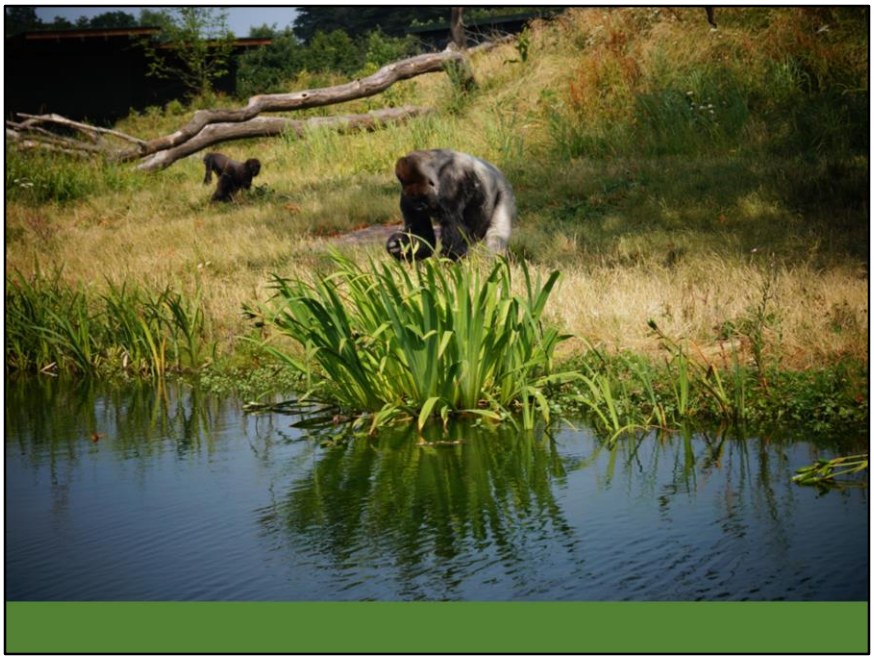


Thorny *Berberis* flowers picked very very carefully and slowly

Observed selecting seedlings of Dandelion *Taraxacum*, and gently teasing flowers only from thorny *Berberis,* often with sudden hand movements as a thorn had caught them.



Large flat grass areas allow family gatherings, but 3m tall ridges of soil and dense planting allow visual separation easily if desired. It is sometimes hard for visitors to see all the gorillas.

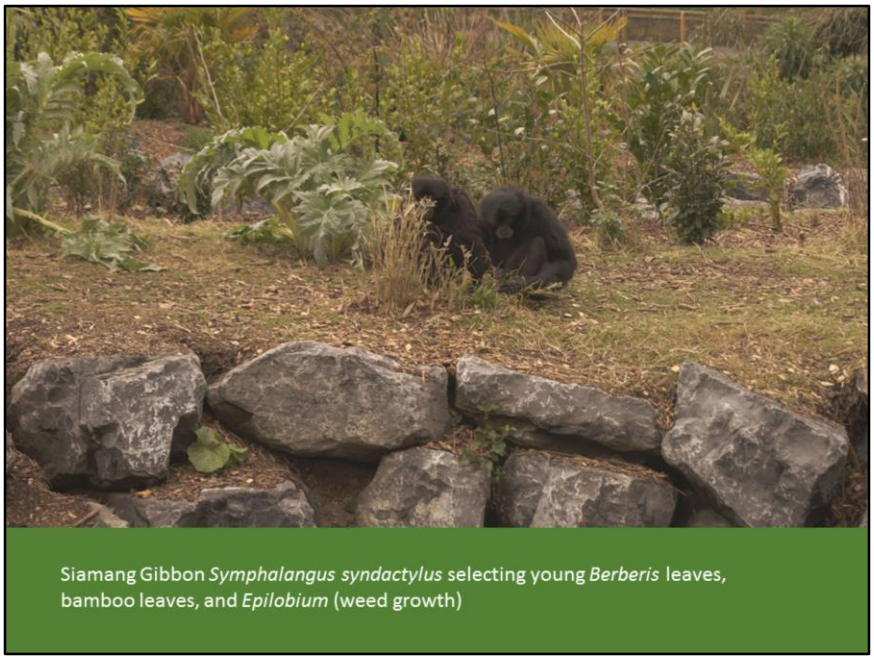


Even at end summer there is often enough vegetation to look good, and allow scatter feeding to disappear, taking time for the gorillas to seek and gather.

Red Capped Mangabey *Cercocebus torquatus* eating flowers (catkins) only of *Salix purpurea,* young leaves and stems not eaten

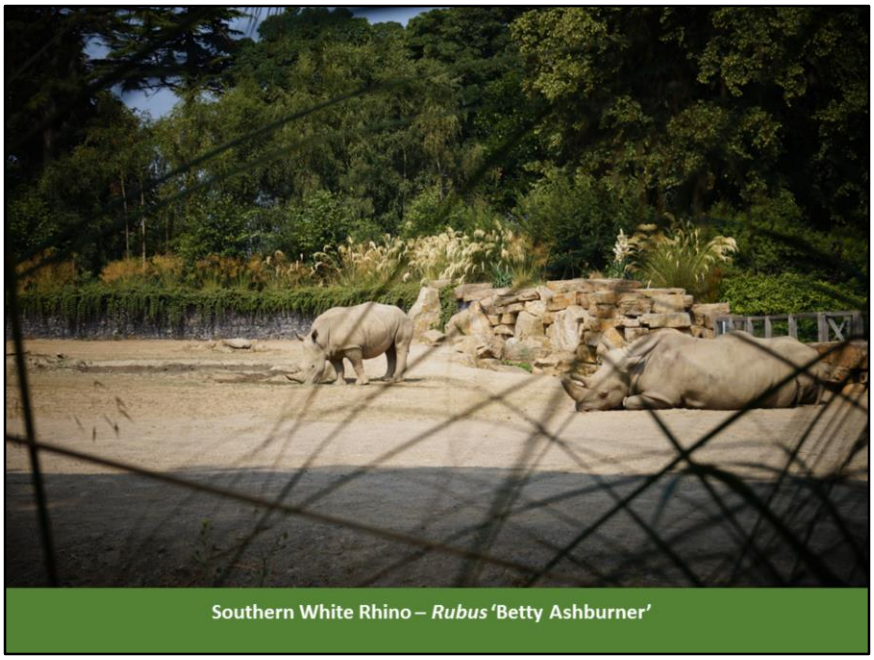
Salix purpurea planted as resistant to rabbits, very bitter salicylic acid present. Leaves and bark not eaten by gorillas or mangabeys, but plants suffered some damage from playing. Plants large enough after 4 years to flower. Both primate groups seen collecting carefully the flowers (catkins), taking each one in turn, but without taking leaves or bark. The gorillas chins were actually green from the pollen.

12 months after planting. Thin island with concrete trees to support climbing ropes. Shared with Siamang Gibbons, seen here grazing bamboo and *Carex pendula*. Other shrubs eaten – often one leaf at a time – were *Berberis julianea, Viburnum tinus*, and *Rosa rugosa. Berberis darwinii* also eaten but not as much.



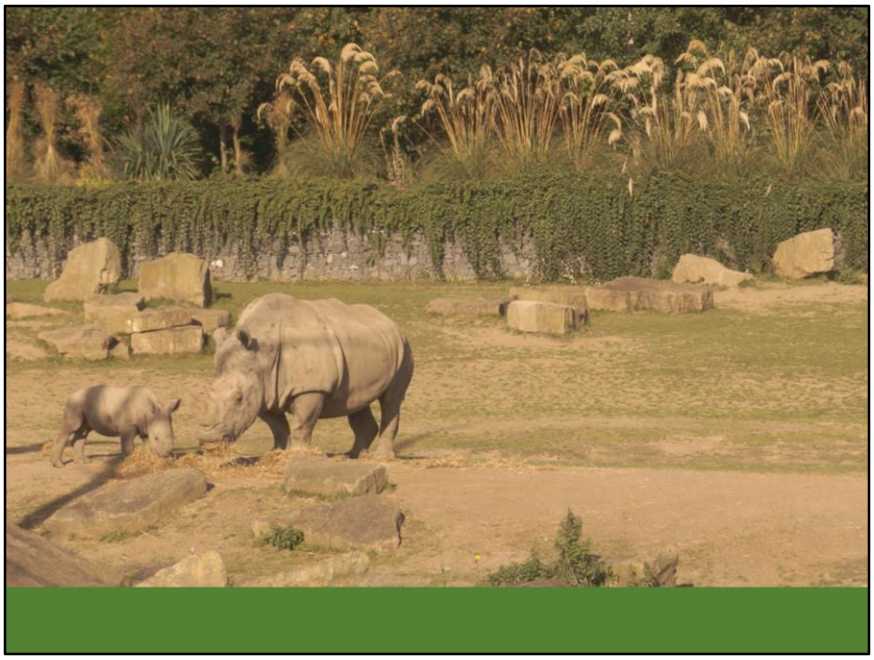
Siamang Gibbon *Symphalangus syndactylus* selecting young *Berberis* leaves, bamboo leaves, and *Epilobium* (weed growth)

The Siamang Gibbons cause much more damage than the orang utans, although an older island which the orang utans again had access to was stripped of all new plants rapidly – as if they were rejecting the changes to the old, but accepting the entirely new island as it was presented to them.



Southern White Rhino – *Rubus* 'Betty Ashburner'

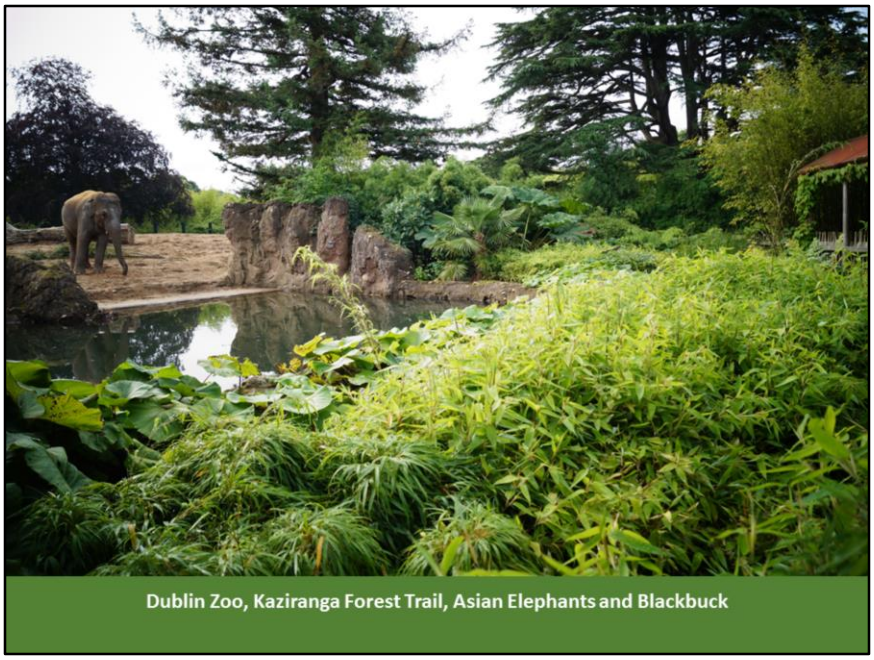
Rubus Betty Ashburner was planted to screen the limestone gabion walls. Worked well, down to ground level in 15 months, where it started to root in and spread. The rhinos totally ignored it for 3 years, then, as it was now on the flat ground surface, they found it was edible, and ate the entire plant as high as they could reach. Once done they forgot about it, and it is growing down again.



Goeldi's monkey *Callimico goeldii*

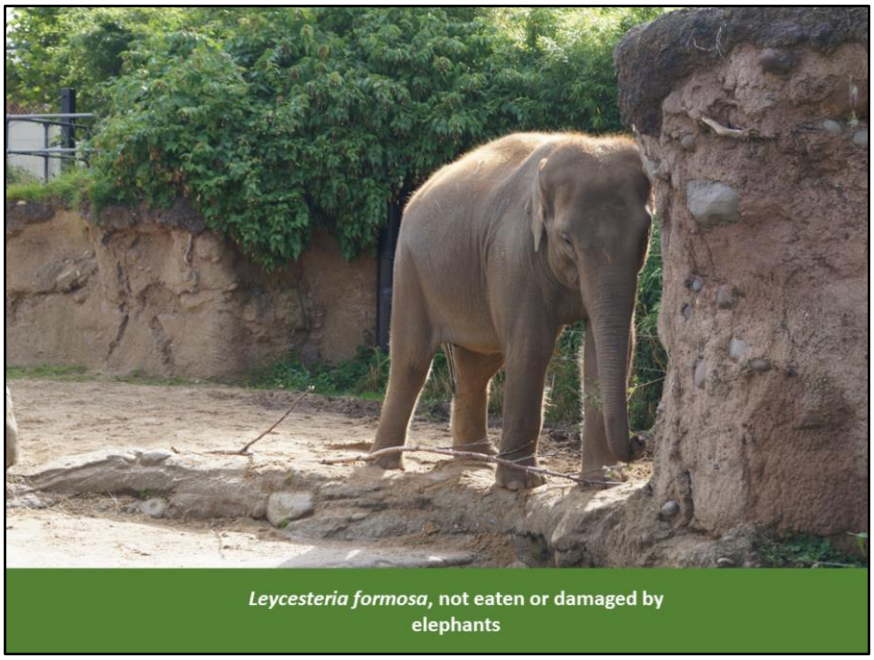
We were requested to source suitable plants to provide some sap collecting for the Goeldi's Monkeys. I asked the EZG Hort Group, and checked the www.zooplants.net web pages. We planted *Prunus lusitanica*, which was used a lot, other plants tried were less successful.

Bark damage on *Prunus lusitanica* from Goeldi's monkey and Eastern Pygmy marmosets *Callitrix pygmaea niveiventris*



Dublin Zoo, Kaziranga Forest Trail, Asian Elephants and Blackbuck

Elephants spend some time in the water, but the larger male has found he can tiptoe on the bottom, with front feet on the pool edge, leaving his trunk free to 'harvest' any plants in reach. The large leafed *Petasites japonicus var. giganteus* is heavily grazed but will not die completely.



Leycesteria formosa, not eaten or damaged by elephants

As part of our background screening we used cheap and vigorous *Leycesteria formosa*. In places it could cascade over the edge of a raised bed, well within reach of the elephants, but not touched, broken, or eaten in any way.