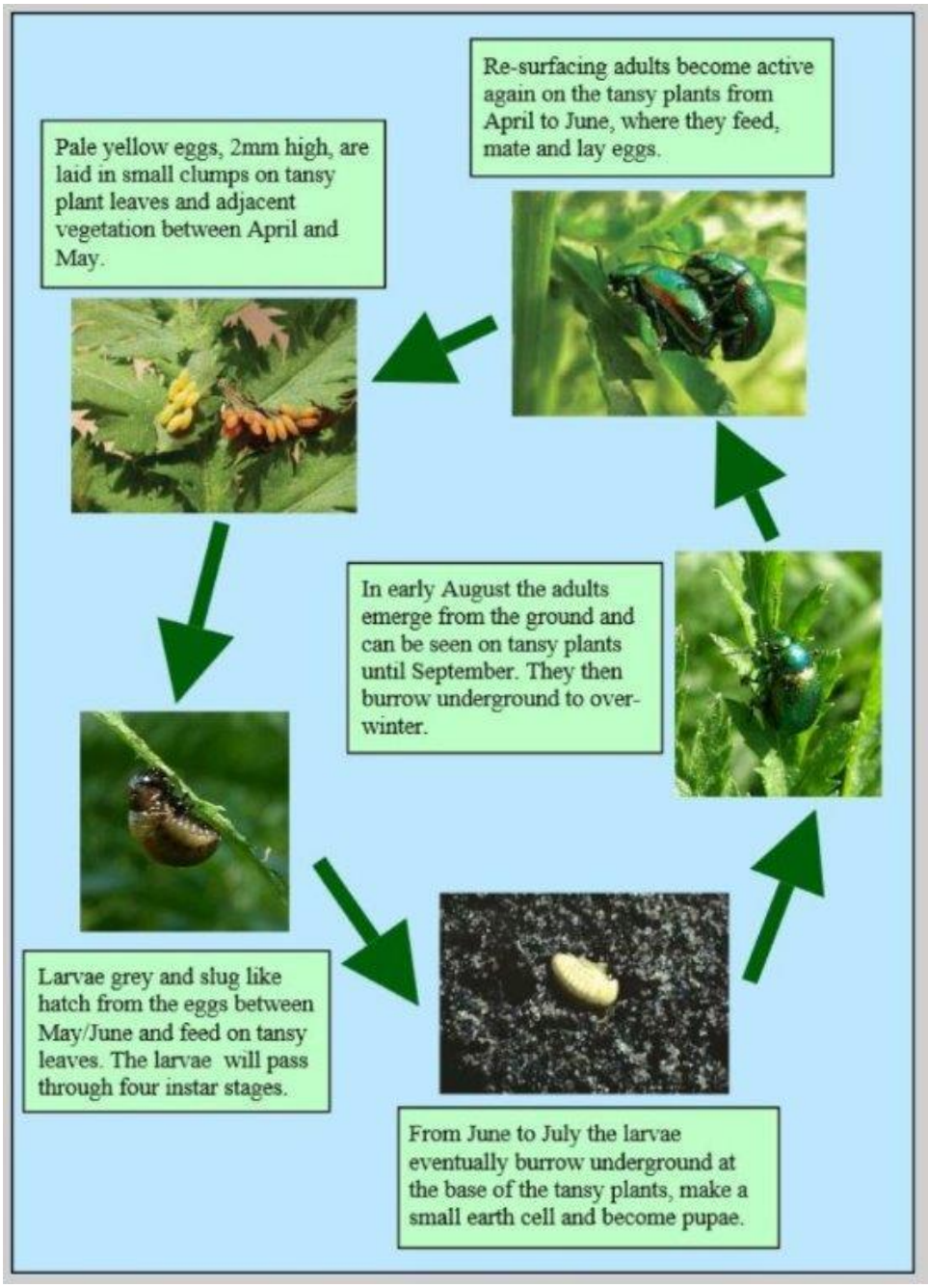
Land management for the Tansy beetle

On the river Ouse in York the key threats to the rare Tansy beetle's long-term survival are: removal/cutting/grazing of Tansy, the beetle's food plant; competition between invasive plants such as Himalayan balsam and Tansy; and summer flooding. Below are some management recommendations, based on consultations with land managers/owners:

Managing around the beetle's life cycle: When planning riverbank management it is important to consider any work in conjunction with the beetle's life cycle (see diagram below). The beetle is particularly vulnerable during the reproductive phase of its life cycle i.e. between March-September. Cutting and other operations that remove Tansy plants should be avoid during this time.



Grazing: For areas of high grazing, where clumps of Tansy are being eaten, stock-proof enclosures containing Tansy plants have worked well, both at Riccall and Beningbrough Hall. Enclosures are areas are that are protected with normal wooden fencing and about 6 x 5 m in area. They create a non-grazed area either around extensive, existing Tansy clumps (if feasible) or built in an appropriate site and then Tansy can be planted within.

- Enclosures are best constructed using post and 2 or 3 rail fencing, which is resistant to cattle but still permeable to floodwater. A barbed wire strand around the top deters cattle reaching over.
- A design that is flooding friendly is best in order to channel the water around the enclosure. In exposed locations, enclosures should run to a point at the upstream end to reduce resistance to flood debris. If they are situated within 7 metres of the bank top, a 'works in rivers' consent may be required from the Environment Agency.
- Enclosures need annual inspection/repair, particularly after flooding, to maintain their integrity.

One of the stock-proof enclosures at Riccall, within with Tansy has been established

Cutting: Sections of riverbank containing Tansy may need to be cut to allow access and to generally manage plant growth. It is often used to control problem plants e.g. thistles. For example, topping can stop the seeding of thistles. When plant growth is vigorous and thistles and nettles are prolific, cutting and removal of all plant material once a year (at a time not affecting the beetle's lifecycle) is recommended to reduce nutrients.

Management of riverbanks by mowing should ideally be done during the beetle's overwintering period, October-February. If vital, cutting could be done in late June to mid-July (during the pupation period), but avoiding larger Tansy patches. Marking of Tansy clumps with flags or canes, and avoiding them during cutting, can also allow flexibility around timing and frequency of management.

Managing competitive plants: Competitive plants can include invasive species (particularly Himalayan Balsam), as well as Willow. The latter is not an invasive but dominates riverbanks and Tansy plants are unable grow under heavy shade.

Himalayan Balsam is very prevalent on the Ouse and easily outcompetes Tansy. The use of chemical control should be avoided near to the river but this species can be strimmed or pulled (to prevent encroachment on Tansy), or will be grazed by cattle. When planting Tansy for the beetle, it is best to avoid in areas where Himalayan balsam is highly dominant, unless there are resources available to

allow annual control. The Tansy beetle monitoring scheme also provides data to the Environment Agency to help support control of Himalayan balsam and other invasive plant species.

Willow has many benefits for wildlife and helps to prevent bank erosion, but they do spread along the riverbank creating long stretches where Tansy is unable to grow. However, Willows can be cut back and their spread managed. This can be done strategically to increase the size of certain Tansy patches. When considering whether to remove willows entirely, the bank erosion protection created by the trees needs to consider.

Himalayan balsam encroaching on Tansy

Plant confusion:

Sometimes Tansy can be confused with other plants, particularly Ragwort which is often controlled, and so Tansy can be removed by mistake. Tansy is a perennial with button-like flowers that mature in July to October. It has dissected leave with finely toothed leaflets and a strong aromatic scent when crushed. In comparison Ragwort has deeply divided leave with daisy-like flowers. See photo right with Tansy (front-bottom) and Ragwort (back-top). Double-check plant identification before uprooting or cutting them.

Planting and seeding:

Where long stretches of riverbank are devoid of Tansy, and grazing is light or absent, using plug-planting or seeding on prepared areas of bare ground can be used to fill in gaps. In wider bank reseeding schemes, Tansy should be included in the seed mix. This should be done with material of local provenance, as Tansy sourced from different locations can vary in chemotypes and may not be suitable for Tansy beetles. You can collect your own seeds or split Tansy clumps from the riverbank; local sources for York-derive seeds and plants are Miresbeck Nursery www.miresbeck.co.uk and Brunswick Organic Nursery www.brunswickyork.org.uk.

The best time to collect seed is in early October, once to the beetles are hibernating and the seed heads are ripe. Collect a few flower heads (don't collect all flower heads – leave some for natural reseeding) and store in paper bags/envelopes (not plastic as the seeds will rot). Keep them somewhere warm and dry overwinter. The seeds will fall out of the flower heads into the bag and will be ready to use early next year. Seeds should be sown densely (germination rates are not high) on raked bare ground, where competition with strong species such as Himalayan balsam and thistles is unlikely.

The best time to establish plug-plants is also early in the year. Make sure that the Tansy plants have a good root system and plant in clumps of about 10 plants with at least 50cm between each plant. Clumps should be 50 m or less apart. Existing Tansy clumps on the riverbank can be split to yield mature plants. Take only a few plants from large clumps (2 m^2 or larger) or move single, existing plants to make bigger clumps and fill in gaps. If you do not own the land being managed, make sure you have landowner permission and avoid planting into areas that are prone to summer flooding – which kills larvae and eggs.