Upper Deua Catchment Landcare Group Inc.

Araluen Creek Restoration Project
Community Newsletter
November 2022

General Meeting

The next general meeting of the UDCLG will be held on **Saturday 19th November** 2pm at Robyn's Cafe, Majors Creek Mountain Rd following the seed propagation day. Join us for project updates of the final stages of Araluen Creek Restoration Project. New members always welcome.

Araluen Creek Restoration Project

The Araluen Creek Restoration Project is funded by the Bushfire Community Recovery and Resilience Fund through the joint Commonwealth & State Disaster Recovery Funding. The project aims to deliver in stream works that will support the creek and its environs into the future.

Onsite Construction

Soil Conservation Service construction work has commenced with the relocation of root balls and rocks to individual sites. On ground works will immediately follow.

A time lapse camera will be set to capture the process and provide a detailed visual account of the works and the outcomes. The final result will provide us with an informative and useful presentation and learning tool to share with other groups, interested folk from the wider community and the Landcare network.

The remediation of the 13 sites will deliver stability, reduce sediment movement, control erosion and future bank collapses.

Erin & Clare, USLC . Andy, LLS Lyall & Brent, Soil Con with project participant Les Mundy onsite at stockpile this week

Delivery of geotech material and hardwood pins this week.

Water Testing

Regular water testing of the Araluen Creek and its major tributaries. Four sites will be routinely tested monthly, with monitoring and testing set to commence soon. Two testing kits have been purchased by the group.

Annual General Meeting- Preliminary Notice

The groups AGM will be held post project. Date to be announced.

Membership

Upper Deua Catchment Landcare Group Inc membership is $2 annually or $5 for 3 years. Contact Treasurer, Robyn Clubb to join or check your status. E: clubbr@yahoo.com

Note: For insurance compliance purposes all volunteers participating in planting days and other activities are required to be a member of the UDC Landcare Group.

Project Information

Cath Harrison, Community Liaison
E: cathharri@gmail.com

UDCLG Newsletter

Newsletter is prepared and compiled by Cath Harrison with contribution from Clare Henderson of USLC.

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Seed Propagation Day

Upper Deua Catchment Landcare Group Inc. invite you to attend

Native species propagation/seed sowing day with Lyn Ellis

Saturday 19th November 2022
10:30am – 3:30pm
Robin Clubbs' café

Morning tea & a light lunch will be provided

Presentation includes native seed collection, germination & growing techniques.

Photo: Clare Henderson

We are calling out to local volunteers to come along, learn about seed collection, propagation and the growing of native plants.
This planting day is a strategy that will allow us to have a follow-up round of planting in early 2023 with locally grown endemic plants.
We encourage locals participating to take home trays of seeds for germination and to nurture plants until Autumn next year.

For further information & expression of interest for catering purposes please call Cath on 0248 464079 E: cathharri@gmail.com

Vegetation of Sites & Volunteer Assistance to Plant Trees

Upper Deua Catchment Landcare Group – Display Boards Ideas and photos welcome

We are getting started on five display boards to tell the story and history of Landcare initiatives in the valley and to outline the special geological and ecological features of the valley.
The proposed topics are:
1. Geology of Araluen Valley
2. Araluen Creek – factual, map, length, features, tributaries
3. History – 25+ years of Upper Deua Catchment Landcare Group
4. Looking after Araluen Creek – stories of the things UDCLG has done to protect the creek
5. Specific Ecological features of the Valley

If you have a story or a special photo or thought about these topics. Please contact Clare on 0412 425 665 or at clare@dacelo.com.au

Clare Henderson

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Target Weed of the Month
St Johns Wort
MAJOR OUTBREAKS VISIBLE IN THE ARALUEN VALLEY

St. John's wort (*Hypericum perforatum*)

St John's wort is a herb with bright yellow flowers. It can poison livestock.

Biosecurity duty

This plant should not be sold in parts of NSW

How does this weed affect you?

St John's wort:
competes with pastures
poisons livestock
can downgrade wool with 'vegetable fault'
can reduce property value.

Livestock poisoning

St John's wort contains a chemical called hypericin. Livestock that eat it become very sensitive to sunlight. Stock will only eat St John's wort when other feed is scarce. Minor exposure to St John's wort affects animal health as:

weight loss, fewer pregnancies, stillbirths, weak young cows producing less milk, fewer lambs and calves surviving weaning.

Intense sunlight worsens the effects of hypericin. Access to shade helps protect animals. On sunny days, stock without access to shade can develop signs of acute poisoning in five hours.

Early symptoms of acute hypericin poisoning include:

Agitation, rubbing the head against posts or trees, weak hind legs, panting, confusion.

Some animals develop mild diarrhoea.

As poisoning gets worse, animals get a high temperature. The skin around their forehead, eyes and ears swells and turns red. Head rubbing against hard objects causes wounds and bleeding. Animals can die from acute hypericin poisoning.

Tolerance

Age and the amount of skin protection affect how tolerant animals are to hypericin. More tolerant animals have:

- pigmented skin
- dense wool or hair
- thick, tough skin.

Adults are more tolerant than young animals because they have thicker skin, wool or hair. Suckling young can ingest hypericin from their mother's milk.

Management

Keep affected stock in full shade for 4 to 7 days. Animals should not show further signs of poisoning when returned to sunlight. If they do, they haven't excreted all the hypericin from their blood yet and need to go back into the shade.

Keep pregnant and lactating animals out of St John's wort-infested pastures. Provide shade in infested paddocks to improve stock tolerance to hypericin.

Never graze when St John's wort is flowering. Levels of hypericin change over the growing season. Hypericin levels:

- are lowest from July to August
- rise rapidly in spring when flower shoots are taller 5 – 10 cm
- continue rising as flowers develop
- are strongest when the plant is in full flower
- decrease towards the end of summer as flowers drop.
- The amount of hypericin varies with the type of St John's wort. See the section on varieties below for more information on how to tell them apart.
- Hypericin levels increase during wet weather.
- **What does it look like?**
- From a distance an infestation appears:
- yellow from November to January
- dark green, brown and yellow from February to April & brownish-red in winter.
- **Leaves are:**
- paler green on the underside, opposite each other on the stem
- spotted with oil glands - leaves can look like they have holes in them when held against a strong light.
- without a stalk.
- **Flowers are:**
- bright yellow, about 20 mm in diameter with five petals with three bundles of long thread-like stamens growing from the centre present from late October to January.
- **Fruit are:**
- a sticky, three-celled capsule, about 8 mm long split open when ripening.
- **Seeds are:**
- in sticky seed capsules, small (0.5 – 1 mm), cylindrical, light brown to black with a pitted seed coat
- **Stems are:**
- Non-flowering stems:

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- grow from the crown, can form tangled thickets, are present in autumn and winter.
- Flowering stems: are upright and woody, sometimes have a reddish tinge branch near the top have two opposite ridges running the length of the stem are produced in spring.

Roots are:

- vertical - growing to about 1 m deep into the soil
- horizontal - producing buds that form new growth above ground.

Varieties

There are two main strains of St John's wort in NSW - broad-leaf and narrow-leaf strains. The strains have different toxicity levels at different times of the year. See the section on grazing timing below for more information on when to graze each variety.

Measure the leaves to tell them apart. Measure leaves at the 6th node (bump) on the flowering stem when the plant is growing well in spring. The narrow-leaf strain has leaves 7 – 9 mm wide. The broad-leaf strain has leaves 10 – 12 mm wide.

The narrow-leaf strain:

- has more oil glands in the leaves
- is late-flowering
- is tall, growing to 90 cm
- has thin stems
- has small seed capsules.

The broad-leaf strain:

- contains fewer oil glands in the leaves
- is early-flowering
- is short, growing to 60 cm
- has thick stems
- has large seed capsules.

Where is it found?

The heaviest NSW infestations are in the central and southern tablelands and slopes. The narrow-leaf strain is more widespread. St John's wort is native to Europe, Asia and North Africa. It was brought to Australia in 1875 as a garden plant. It is used in herbal medicine.

What type of environment does it grow in?

St John's wort grows in pastures, riparian areas, and bushland. It prefers:

- rainfall over 600 mm per year
- locations above 500 m altitude.
- deep soils.

How does it spread?

By seed

The sticky seed capsules stick to animals. Seeds are also carried in the digestive tracts of animals. Wind spreads seed over short distances. Water, machinery, humans, livestock or feral animals spread seed over long distances.

By plant parts

Roots sucker and new plants grow from fragments. Cultivation can move root fragments.

Control

Long-term control of St John's wort needs to consider that:

- new seedlings appear from autumn to spring
- seeds need mild temperatures, light and rainfall to develop
- competition suppresses young seedlings
- most new foliage grows in autumn and winter
- foliage dies off in late spring
- flowers develop in spring to autumn
- new plants do not flower in the first year
- seeds are released autumn to winter
- a plant can produce up to 33 000 seeds per year
- seeds can remain viable for 12 years.

Prevention

To reduce the risk of infestations developing:

- learn to identify the weed and look for it in spring
- minimise stock movements from infested to clean paddocks
- quarantine livestock from a contaminated area for five weeks
- clean vehicles that have passed through infested areas
- buy certified seed
- restrict feeding to flat, easy to monitor areas or paddocks with strong perennial pasture growth.
- check feeding areas and control any St John's wort plants (it's best to also manually remove seed heads).
- establish competitive perennial pastures along boundaries of infested paddocks - this acts as a buffer against further spread.

Pasture management

Healthy perennial pastures are the best long-term defence against St John's wort. Good autumn and winter pasture cover can suppress new St John's wort plants. To maintain healthy pasture cover:

- grow combinations of winter and summer pastures

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- rest pastures between grazing periods
- test soil to check fertility
- control pests
- use fertiliser if needed.

An agronomist can advise on a crop program to support St John's wort control in arable areas. This can reduce the amount of St John's wort seed in the soil before you sow a perennial pasture. A typical program might be to:

- spray or plough in summer to reduce weed numbers
- control weeds again in autumn before sowing a winter cereal or forage crop
- repeat for a second year to decrease the number of St John's wort seeds in the soil
- sow a perennial pasture in the third autumn.

Sowing perennial pastures can help suppress St John's wort even in less arable country. Use a direct drill/minimum tillage method to reduce soil disturbance. Control annual weeds over summer and again in autumn before sowing pasture. Allow the new pasture to set seed in the first year. Spot spray any new St John's wort plants.

Grazing

Make sure there are shade trees in St John's wort-infested paddocks for animals to shelter under. Grazing is usually the only practical way to control St John's wort in steep areas.

Take care of animals when using grazing as a control strategy. Never graze when St John's wort is flowering.

Sheep with superfine or fine wool are best suited for controlled grazing of St John's wort. Superfine merino sheep are more than twice as tolerant to hypericin as medium wool merinos. Use adult merino wethers or dry, non-pregnant ewes with at least four months' wool growth. Cattle, goats and other stock are less suitable.

Timing

Safe grazing periods are when the flowering stems are dead. The base of the plant will have soft, green shoots that are low in hypericin. Grazing hard in spring can delay flowering stem growth and extend the safe grazing period.

Broad-leaf St John's wort has a longer grazing period. With sheep, graze:

- broad-leaf from early May to mid-October
- narrow-leaf from early July to mid-September.

In spring, move stock off St John's wort pastures **before flowering stems reach 5 – 10 cm.**

Cattle can graze St John's wort pastures about six weeks earlier than sheep. Cattle can also remain on St John's wort infested pastures much longer than sheep in spring.

Change grazing periods based on the weather. Shorten during wet years as hypericin levels increase. Grazing can go longer when it's dry.

Use short periods of intense grazing. Fence in heavy infestations of St John's wort to encourage stock to intensively graze those areas.

Physical removal

Hand-weeding is not an effective way to control St John's wort. The entire root system has to be removed to stop new plants from growing.

Cultivating tends to spread the weed unless all the roots are brought to the surface and dried out.

Fire

Burning can destroy seeds on the plant. The plant will regrow from the roots. Fire tends to cause more damage to pasture than to St John's wort.

Biological control

Eleven biological control agents have been released in Australia. Six have established.

Chrysolina beetles

Chrysolina larvae and beetles feed on the leaves of St John's wort. Larvae feed on winter growth. Adult beetles attack spring growth. Beetles can form dense infestations that remove all leaves on St John's wort.

Chrysolina beetles are most effective when beetles and larvae feed in the same or consecutive years. They are only effective in unshaded situations as they mate only in sunlight.

Catch beetles in spring and move them to new infestations. Do not use herbicides when high numbers of Chrysolina beetles are present. Partially defoliated plants are unlikely to absorb enough herbicide to kill them.

Chrysolina hyperici and *Chrysolina quadrigemina* are black with bronze, dark-blue or purple reflections. They are oval shaped. *C. quadrigemina* is slightly larger (6.0 – 7.1 mm) than *C. hyperici* (5.3 – 6.1 mm). Some *C. quadrigemina* beetles are bluish.

Beetle (*Agrilus hyperici*)

Adult beetles are bronze coloured and 5 mm x 2 mm in size. They lay eggs in the crown of St John's wort plants in summer. When they hatch, larvae bore into the roots and kill the plants. This beetle only lives in one or two isolated sites near Mudgee and Tuena.

Gall midge (*Zeuxidiplosis giardi*)

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This small fly lays eggs in the terminal buds. When they hatch, larvae feed on the leaf buds and cause lumps (galls). Populations rarely get large enough to have an impact on St John's wort infestations. The gall midge helps to control St John's wort in shady country where other insects are not active.

Green aphid (*Aphis chloris*)

Green aphid attacks flowering stems of St John's wort in summer. Populations rarely get large enough to have an impact on St John's wort infestations.

St John's wort stunt mite (*Aculus hyperici*)

The stunt mite affects the narrow-leaf form of St John's wort. It is too small to see with the naked eye. The mites feed on the growing tips of plants. Damaged leaves often have yellow streaks or mottling. Rosettes and flowering stems are stunted. Mites can kill narrow-leaf St John's wort over 2 – 3 years. All life stages are present throughout the year.

Chemical control

Only spray when St John's wort is actively growing. Try to reduce damage to pastures through herbicide selection and timing. Two consecutive years of spraying is often required to kill plants. The deep, extensive root system can survive the first treatment, and the plant can regrow.

Spot-spraying

Spot-spray isolated infestations when St John's wort is in flower (November to January). It's too late once the flowers have turned brown. Cover all the foliage with herbicide.

Boom-spraying

Use boom-sprays between budding and full flowering (November to early January). If the existing pasture can be salvaged use selective herbicides. If the existing pasture cannot be salvaged, use glyphosate in November/December.

Weed wiper

Weed wipers can treat patches of St John's wort. Graze useful plants below the wiper height before the start of St John's wort flowering. Treat with the wiper at full flowering.

For further information go to:
www.dpi.nsw.gov.au

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