LANDHOLDER FLOOD RECOVERY ADVICE

Riverina-Murray

Edition 1 - December 2016

Advice on recovering from the 2016 floods

NSW GOVERNMENT

Murray Local Land Services
Riverina Local Land Services
Department of Primary Industries

RURAL FINANCIAL COUNSELLING SERVICE

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THE 2016 FLOODS

The spring 2016 floods in the Riverina-Murray region were one of the most protracted and widespread flood events on record. While the eastern part of the region could do with some rain, flood waters are still moving through the far western end of the Riverina-Murray catchment. The prolonged inundation and flooding impacted agricultural businesses across most industries, some significantly.

While many are flat out with harvest across the Riverina-Murray region, there is still an opportunity before 2017 to think through some of the issues caused by the flooding. If there is water still lying about there are some heightened animal health risks. Floods always move weeds across the landscape, including new or invasive species. Inundation and flooding creates a range of pasture management issues. Mosquito numbers are still high, and general health and wellbeing of farming families needs to be at the top of the list to think about.

This Landholder Flood Recovery Advice provides some useful information to assist in recovering from the flood event. The contributors, Murray Local Land Services, Riverina Local Land Services, NSW Department of Primary Industries and the NSW Rural Financial Counselling Service, can be contacted for further assistance.

Riverina-Murray Agriculture Recovery Team
NSW Government

Pasture health and survival after flooding

By Sue Briggs, Murray Local Land Services

The spring floods of 2016 have seen farms in parts of NSW being inundated with water for varying lengths of time. The impact on pasture will vary depending on how the flood proceeded across the land, the duration of inundation, soil type, temperature, pasture species and future seasonal conditions. The impacts should be assessed on a paddock-by-paddock basis to determine the best strategy.

Will I have enough feed for my stock?

A flood can result in anything from a reduction in productivity for a minimum of three weeks to a complete loss. A pasture stocktake on the remainder of the property will help producers determine if they have enough feed available for the current stocking rate and production goals. A pasture stocktake involves measuring the pasture in each paddock to determine the current feed on offer and is used to complete a whole-farm pasture budget for the next month. If there is a deficit, producers will have time to consider the options of selling stock, assessing if they have enough fodder on hand or whether they need to source fodder.

Soil recovery

Inundation is not normally detrimental to free-draining soil with good structure. Soils with poor structure such as slaking, dispersion, hard setting or compaction will be impacted the most. It is not the flood but the waterlogged soil that impacts plant survival. Waterlogging conditions produce anaerobic conditions that change the soil chemistry, releasing toxic levels of manganese, aluminium and hydrogen sulphide, causing root death.

Survival and health of pasture

Damage to pasture can range from minor sediment deposition to total loss. Use a visual assessment to determine the survival rate of desired pasture species. For improved grasses, a target greater than 70 per cent is desirable. Populations under 50 per cent should be earmarked for renovation as too many gaps will reduce productivity and provide ideal conditions for weed invasion.

Timing of the assessment can be staggered over a number of weeks, as growth can be depressed for up to four weeks as plant roots re-establish. Plants stressed from the water logging are more susceptible to pest and disease outbreaks, resulting in further losses. Pasture species such as phalaris, tall fescue, paspalum and microlaeana are able to handle flooding compared to sub-clover and lucerne.

Existing pastures option

In some areas, the pasture will recover quickly as the paddocks dry. Palatability of pasture may be an issue due to the silt on the leaves. Delay grazing until there is further storm rain to wash the silt off the pasture. Nitrogen can be applied to help recover lost production, but success will depend on pasture species, soil fertility and future rain events. Remember to exclude stock from the paddock for 21 days after application. Peak response will occur six to eight weeks after a nitrogen application, so it is important to consider the probability of follow-up rain to ensure the benefits are gained.

Pasture length greater than 10 cm tends to collect more silt and rank, rotting vegetation. This will smother the newly emerging shoots, impacting the rate of recovery and the pasture will be less palatable to stock. If the pasture has survived in acceptable populations, it is likely to benefit from topping with a mower / slasher to remove any rank vegetation or sediment and open up the sward for new shoots to regenerate.

Re-sowing options

If a decision to re-sow is made, paddock preparation should commence as soon as possible. This may include the removal of trash and debris, appropriate weed and pest control, soil testing and pasture species selection.

Summer fodder crop option

The use of summer fodder crops such as millet allows a return from the paddock and provides competition against weeds through the summer months. Millet crops are often cheaper, provide quick feed without toxicity concerns and usually have better regrowth after grazing compared to sorghum. This option should only be considered if you have a full soil moisture profile and the long-term forecast of above-average summer rainfall.

With flood waters having receded, it is time to assess the damage and work with trusted advisors to develop a practical plan. Focus on the better areas first as more affected paddocks may take time to get back into production.

Act quickly to control weeds

By Lisa Castleman, Riverina Local Land Services & John Fowler, Murray Local Land Services

Floodwaters usually carry weed seeds that will impact agricultural country long after the floods have receded. Previous floods have been responsible for introducing new weed species (such as lippia) and herbicide resistant weeds (such as Roundup®-resistant ryegrass). Weeds are always opportunists, looking for bare soil, soil moisture or soil nutrients.

Landholders are encouraged to regularly inspect their previously flooded country to determine if new weed species have established. Inspections need to occur soon after the flood recedes as troublesome weeds are more readily controlled while they are still young and actively growing. Older, mature or senesced plants are not readily controlled.

All new weed incursions should be investigated, but two weed species to be particularly looking for are loosestrife and lippia.

Loosestrife (*Lythrum hyssopifolia*), common names hyssop or lesser loosestrife, is an upright, hard-stemmed herb, presumed native and similar to rosemary in appearance, which grows to 40cm in height and has tiny pink flowers. It has responded to the excess soil moisture in spring and has shot away now. Loosestrife is problematic, as its toxic nature poses an issue for livestock producers.

Cattle are more susceptible to the plant's toxicity than sheep, but all stock are vulnerable so the weed should be sprayed before the paddock is grazed.

Loosestrife plants contain a kidney toxin, so stock need access to plentiful and good-quality water to help compensate for any sub-clinical disease.

There are a number of herbicide options, including mixtures, for the control of loosestrife. As always, follow any label directions and observe grazing withholding periods. Those herbicides that quickly kill the plant are preferred over slow-acting formulations.

Once the plant has been killed with herbicide, the risk of toxicity seems to reduce.

Lippia (*Phyla canescens*) is an environmental and pastoral exotic weed of inland river systems that is increasing as a threat to agriculture. It has been present throughout flood-prone country in the Riverina-Murray region for several decades, but its prevalence can increase markedly after floods.

Lippia is a stealthy perennial plant that functions as a groundcover, competing with other more useful pasture plants. It is not palatable to livestock and, due to its prostrate nature, is not tall enough to be a useful feed for cattle.

There are herbicide options for lippia. Ensure the weed is correctly identified and use the label rate as per instructions to achieve control.

- ***Lippia competes with pasture plants. Photo courtesy NSW DPI.***

The NSW Department of Primary Industries Noxious and Environmental Weed Control handbook (found at www.dpi.nsw.gov.au under 'Weeds'), outlines the herbicide options:

- Active constituent-Dichlorprop at 600g/L e.g. Lantana 600® with a broadacre rate of 5.0 L/ha with a minimum application rate of 100 L spray solution/ha. The best results are obtained when spraying at flowering and with very good soil moisture.

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Act quickly to control weeds *continued*

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- Under Australian Pesticides and Veterinary Medicines Authority Permit 14197, to control lippia in pasture and fallow situations, the active constituent of 2,4-D amine at 625 g/L e.g. Amicide® 625 can be used for control at a rate of 1.7-3.1 L/ha plus 1% crop oil in a pastoral land situation, applied to lippia in a fresh condition, mid-flower and with good soil moisture present.

A follow-up spray is usually required to control lippia.

Pasture improvement after floods

Once weeds have been controlled by herbicides, they need to be replaced by more desirable pasture or crop species.

Pasture improvement options need to be well suited to the soil type, climate and time of sowing. A perennial species will need to be considered in the pasture mix to compete with the deep-rooted (up to 80cm) species such as lippia.

Because the weeds were introduced by flood water, the pasture improvement options also need to include species that are either suited to waterlogging or that will regenerate after a flood event.

Irrigated pasture options that are more tolerant of waterlogging events include Balansa clover (also mildly tolerant of salt), Persian clover, strawberry clover, and the sub-clover cultivars of the Yanninicum type; for example Riverina and Napier.

Dryland grazing legumes that have performed well in the western Riverina-Murray region include Sava snail medic, Parragio barrel medic, spineless burr medic and gland clover.

The temperate grass fescue can tolerate short periods of flooding (days rather than weeks).

Phalaris (*Phalaris aquatica*) is a perennial grass tolerant of flooding events but difficult (slow) to establish. Once established, it can be a very hardy grass that performs well in a fertile situation (with a legume and some pasture fertiliser) where it is not allowed to become too rank in late spring.

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Care for stock after floods

By Linda Searle, Murray Local Land Services

Many communities have recently been hit with floodwater. This has many potential implications to humans, agriculture and livestock. Livestock owners need to be prepared and observant to ensure the continuing health of their animals.

When water levels are steady or receding, especially after a prolonged period, it is important to be on the lookout for increases in pests and diseases, and to look after the nutrition of your animals.

Livestock standing in water for long periods have an increased risk of potentially severe health issues. Diseases can range from lameness to bacterial infections such as pneumonia or septicaemia, which can result in death.

Others include diarrhoea (e.g. from salmonella, yersinia or coccidia) and dermo disease, which can occur in wet conditions, ideal for the survival and multiplication of pathogens.

An increased prevalence of pests can also cause an increase in disease in livestock. Flies may cause flystrike and pinkeye, and mosquitoes can spread *M. ovis* (a disease that causes anaemia in sheep), Murray Valley encephalitis and Ross River fever, which may cause disease in horses and humans. Mosquitoes can also bring three-day sickness, which can cause anorexia and recumbency in cattle. Though not usually seen this far south, it can be found in areas not normally affected when conditions are right.

It is also important to consider the lack of access to feed, which can lead to severe loss of condition or metabolic disease (which will often present with neurological signs e.g. paddling, down etc.).

You will need to assess the quality of water-affected feed, including silage, hay and standing pasture, before feeding it to stock, as it may lose nutritional value or spoil and be prone to bacterial, mould or mycotoxin contamination. Some of the toxins produced can cause diarrhoea, weight loss, liver damage or abortions. Please seek advice from your veterinarian, Local Land Services or livestock consultant about the suitability of affected feed before using it.

- ***Livestock standing in water for long periods are prone to disease.***

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Watch for skin & wool problems

By Mark Corrigan, Murray Local Land Services

With the big wet this year, sheep producers are more likely to see flystrike - especially body strike - as an increase in fleece rot and lumpy wool predispose animals to strike. Conditions that prevent the fleece from drying out create the ideal environment for pregnant female blowflies to lay eggs, as well as moisture for the eggs to hatch and an area for hatched larvae to feed.

We have already had increased reports of lumpy wool, or 'dermo', cases this year due to the wet winter and spring.

Lumpy wool

Lumpy wool is a skin infection caused by a bacterium, Dermatophilus congolensis. The bacteria infect the skin and cause scab formation. The lesions typically dry out within four to six weeks, and the hard scab masses lift from the skin with the fleece as it grows, causing the characteristic lumpy wool. The bacteria that cause the disease lie dormant in small scabs on the ears, faces and udders of sheep. When these scabs get wet, the organism germinates, multiplies rapidly and spreads into wool follicles. It is transferred to other sheep by contact.

Wet weather coinciding with lambing allows the infection to spread rapidly from the ewe to newborn lambs. The spread of infection commonly occurs when a ewe cleans a newborn lamb, since fluids covering the lamb provide an excellent medium for the rapid growth of the organism.

A wax layer on the skin normally protects sheep against this infection. In adults the wax layer is quite thick, but it is thin and poorly developed in young sheep, making them particularly susceptible to infection. If the wax layer is broken or poorly developed, lumpy wool infection of the skin can occur quickly. Lambs with severe infections can become ill thrifty (displaying failure to grow) and in some cases die.

Most affected sheep recover spontaneously. Others only recover following shearing, when their fleeces dry out. Antibiotics may be used to treat severe or stubborn cases, and this is most commonly done in young or valuable animals. This treatment stops serum exudation and allows the scab to grow away from the skin so that the sheep can be shorn normally. Sheep should be treated several weeks before shearing. The flock may have to be mustered and yarded to identify affected sheep, but avoid this in wet weather, as it help to further spread the disease.

Lumpy wool infection is more likely when fleeces are wetted or slow to dry out. For this reason, some recommendations for control in infected flocks are:

- Shear and dip young sheep first before the area becomes contaminated from older sheep, which may be carriers of the disease.
- Treat infected sheep with antibiotics four weeks prior to shearing. Speak to your veterinarian for advice.
- Shear affected sheep last.
- Cull stock that do not respond to treatment or that were affected as young animals.
- If treatment of long-wool sheep is required for lice control, incorporate 0.5 per cent zinc sulphate solution, using a product registered for the purpose.

Be careful when handling a wet sheep with lumpy wool as the bacterium can cause skin infection in humans.

Fleece rot

Fleece rot is a dermatitis caused by moisture and bacterial growth at skin level.

The bacterial activity causes the fleece to become discoloured. However, bacterial discolouration in the absence of crusty exudates (fluids) is not fleece rot but a result of moisture and bacterial activity in the fleece that can lead to fleece rot.

Fleece rot is more common in wet seasons as it occurs after the fleece has been wet for a prolonged period, and expresses differently to lumpy wool. Lumpy wool tends to form columns of hard lumps along staples, whereas fleece rot forms bands parallel to the skin.

Flystrike

As the weather warms, it will create a perfect environment for flies to proliferate. Now is the time to consider how you are going to manage your sheep through the fly season, taking into account withholding periods for wool, meat and milk, and the length of the period of protection of the produce..

For further advice, contact your private veterinarian or your Local Land Services district veterinarian, and/or assess the many useful resources on the 'Flyboss' website (www.flyboss.org.au).

Taking care of yourself in hard times

By Danny Byrnes, Department of Primary Industries

The impact of natural disasters such as flood can affect producers beyond their own resilience levels. Many require assistance to recover both financially and personally.

If you are finding it difficult to cope in the aftermath to the recent floods in our area, it is important that you make the effort to look after your own well-being.

The following is a list of recommendations to enable you to begin and continue the recovery process. It is important to:

- Spend time with family and friends
- Try to get back to a routine
- Continue a healthy lifestyle (eating, sleeping, exercising)
- Take time out but don't isolate yourself
- Write down your worries and concerns
- Express your feelings in your own time and way
- Accept help when it is offered
- Limit the amount of media coverage you are exposed to
- Don't expect to have all the answers
- Understand you are not alone in your experience.

Professional assistance

There are also signs to be aware of that may mean you need professional assistance. They are:

- The level of distress feels extreme
- The emotional reactions are lasting too long (>4 weeks)
- The distress interferes with the ability to participate in day to day activities
- Withdrawing from usual relationships
- Feeling overwhelming fear for no apparent reason
- Experiencing panic symptoms
- Avoiding things that bring back memories to the point that day to day activities cannot be carried out
- Feeling excessive guilt
- Losing interest in the future
- Experiencing thoughts of self harm or suicide

Where you can find help

- **General Practitioners (GPs)**
- **A range of specialised mental health clinicians and services (referral via GP):** psychologist, psychiatrist, social worker, mental health nurse.
- **Online counselling and information services**

  Beyond Blue: www.beyondblue.org

  Centre for Post-traumatic Mental Health: phoenixaustralia.org

  Red Cross: www.redcross.org.au

  Australian Government Disaster Assist: www.disasterassist.gov.au

  Kids Helpline: www.kidshelp.com.au

  Headspace: www.headspace.org.au
- **Telephone support services**

  NSW Mental Health Line: 1800 011 511

  Accessline (Murrumbidgee): 1800 800 944

  Lifeline Crisis Support: 13 11 14

  Alcohol and Other Drugs Information Service (ADIS): 1800 422 599

  MensLine: 1300 789 978

  Kids Helpline: 1800 55 1800

  Suicide Callback Service: 1300 659 467
- **Emergency Services (if person or others in danger):** 000

Things to try and avoid:

- Using alcohol or other substances to cope
- Working too much
- Engaging in stressful situations
- Withdrawing from family and friends
- Avoiding pleasurable activities
- Talking about what happened if you are not ready
- Taking risks or making major life decisions.

More information on Natural Disaster Recovery Assistance for Primary Producers may be found at: www.dpi.nsw.gov.au

Floodwaters come back to bite

Producers in mosquito-prone areas need to be mindful of mosquito-borne diseases. The recent flooding has created ideal conditions for mosquito breeding, and increased the likelihood of Ross River virus, Barmah Forest virus, Kunjin virus and Murray Valley encephalitis.

These diseases, while differing in some aspects, can cause flu-like and other symptoms for at least a week, and often up to 10 days. In the case of Murray Valley encephalitis, the symptoms can be more severe and potentially dangerous.

We urge you take precautions to avoid mosquito bites, including covering as much skin as possible with light-coloured, loose-fitting clothing and covered footwear, and applying repellent regularly to exposed skin.

For more information on these conditions, and how to protect yourself from them, go to the NSW Health website - following are some relevant links:

Information on mosquitoes

www.health.nsw.gov.au/Infectious/factsheets/Pages/mosquito.aspx

www.health.nsw.gov.au/environment/pests/vector/Documents/fight-the-bite.pdf

www.health.nsw.gov.au/environment/pests/vector/Documents/flood-affected-communities.pdf

Information on diseases

www.health.nsw.gov.au/Infectious/factsheets/Pages/ross-river-fever.aspx

www.health.nsw.gov.au/Infectious/factsheets/Pages/Barmah_Forest_virus_infection.aspx

www.health.nsw.gov.au/Infectious/factsheets/Pages/kunjin_virus.aspx

www.health.nsw.gov.au/Infectious/factsheets/Pages/murray-valley-encephalitis.aspx

- ***Beware of mosquitoes this summer***

This information has been sourced from the NSW Health 'Mosquito-borne infections' factsheet.

Flood recovery - creating a financial plan

By Graham Christie, Rural Financial Counselling Service

The extent of damage on individual farms will determine the need to re-arrange the operating financial plan for the coming year.

The recovery plan will range from dealing with minor inconvenience through to wholesale disaster. In many cases there has been significant damage both to infrastructure and to cashflow through lost crops, stock and the need to repair damaged fences, roads culverts and levee banks. The hidden costs will be downgraded pastures, both in quantity and quality, and well as the impact of extended flooding on soil fertility and structure.

Before identifying the options available to fund the recovery the starting point is to create a recovery plan that identifies all the necessary work to be done and put a dollar value on it. The plan should also seek to create an order of importance to ensure the essential work is prioritised for early attention.

The real question then is 'where does the money come from?'

The options include:

- Reserves in the form of farm management deposits, cash reserves or other liquid assets
- Using current working capital limits that may provide enough funds to repair or recover.
- Use of the Natural Disaster Loan available from the NSW Rural Assistance Authority, or alternatively the Farm Innovation Fund may be useful in some circumstances. Go to www.raa.nsw.gov.au.
- Deferring capital payments on loans or extending current limits may provide sufficient working capital to fund the recovery.

> **"The hidden costs will be downgraded pastures, both in quantity and quality, and well as the impact of extended flooding on soil fertility and structure**

In all these options, it is important to engage with your bank's relationship manager to determine your best strategy for short-term flexibility to get the business back on track.

Accessing support from Local Land Services or NSW Department of Primary Industries staff, together with a Rural Financial Counsellor, will enable you to work through your recovery plan and prepare your budgets to be presented to your lender in the best possible way. All of these organisations provide free and confidential support.

Counsellors in Riverina-Murray

Buronga - Glen Norris
gnorris@rfcsnsw-sr.com.au, 0447 283 688.

Coleambally - Graham Christie
gchristie@rfcsnsw-sr.com.au, 02 6954 4179, 0438 444 540.

Deniliquin - Murray Freshwater
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Ganmain - Kevin McCrum
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Young - Elke Cleverdon
ecleverdon@rfcsnsw-sr.com.au, 0427 935 823.

Damage reporting

While the flooding has largely receded, landholders are still encouraged to report agricultural losses, including fencing, farm infrastructure, crops, pasture, fodder and livestock. Any previous damage reports can still be updated. Damage can be reported by contacting Local Land Services on **1300 795 299**, or email land.murray@lls.nsw.gov.au or admin.riverina@lls.nsw.gov.au.

ACKNOWLEDGEMENTS & USEFUL LINKS

The advice contained in this document forms part of the flood recovery response driven by the NSW Government Riverina-Murray Region Recovery Committee.

The committee would like to acknowledge the contributions of:

- Murray Local Land Services
- Riverina Local Land Services
- NSW Department of Primary Industries
- The NSW Rural Financial Counselling Service
- NSW Health.

Useful links

The following links provide complementary information to the advice provided in this publication:

- www.dpi.nsw.gov.au/animals-and-livestock/nutrition
- www.dpi.nsw.gov.au/biosecurity/weeds,
- www.dpi.nsw.gov.au/agriculture/broadacre-crops,
- www.dpi.nsw.gov.au/content/agriculture/emergency/flood
- www.lls.nsw.gov.au/murray
- www.lls.nsw.gov.au/riverina
- www.raa.nsw.gov.au
- www.health.nsw.gov.au
- www.rfcsnsw-sr.com.au

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