BEFORE INDEPENDENT HEARING COMMISIONERS

IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF

Proposed Waikato Regional Plan Change 1: Waikato and Waipa River Catchment

STATEMENT OF PRIMARY EVIDENCE OF SALLY LINTON PERSONALLY AND FOR NEW ZEALAND THOROUGHBRED BREEDERS ASSOCIATION AND ORS DATE 23 APRIL 2019 SUBMITTERS 72503, 73067, 73095, 82030, 81968, 81978, 81976



New Zealand Thoroughbred Breeders' Association 9 Anzac Street Cambridge 3434 New Zealand

Introduction

- 1. My full name is Sally Margaret Linton and I am a self-employed environmental consultant, Sustainable Options
- 2. I hold a BHortSc (1983) and DipBusAdmin (1996) from Massey University and a LLB(Hons) (1998) from Waikato University.
- I have been a member of the Resource Management Law Association since 1998 and a life member of Equestrian Sports New Zealand. I was on the Board of Eventing New Zealand from 2007 – 2012 including three years as chair and I was a Board member of New Zealand Pony Clubs Association for two years (2010 – 2012).
- 4. My work experience includes dairy farm ownership in the Waikato and Bay of Plenty. For 8 years I was a manager of a Waikato kiwifruit property and a horticultural consultant.
- 5. Since gaining my law degree in 1998 I have worked in the area of environmental and resource management policy primarily for rural NGO's as well as being a self-employed environmental consultant. These roles include as a policy advisor, senior policy advisor, extension provider and science contract manager.
- 6. I am currently a self-employed environmental consultant and hold contracts with New Zealand Thoroughbred Breeders Association (NZTBA), Waikato Regional Council (WRC) and the Ministry of Primary Industries.
- 7. I currently reside and own an equestrian lifestyle block at Hautapu in the Mangaone subcatchment.
- 8. I have been involved with horses all my life primarily in the sport horse sector as a competitor, administrator and have been a part owner of a sport horse stallion standing at stud.
- 9. I am familiar with the Proposed Plan Change 1: Waikato and Waipa River catchment (PC1).
- 10. My involvement with the PC1 process began when I took over as a delegate for the Rural Advocacy member (Federated Farmers) on the Collaborative Stakeholder Group to PC1 in December 2014. Since early 2016 I have been informing and supporting the equine sector through the PC1 process, in particular NZTBA (from mid-2018). I am also working with WRC to provide them with a better understanding of the equine sector and their environmental impacts. I have also assisted NZTBA, NZ Trainers Assn and other horse property owners in their submission, further submissions, and coordinated the preparations of their statements and primary evidence.
- 11. I also personally made a submission and further submission to PC1.

Code of Conduct

12. My role in this hearing is primarily as the submitter's representative and advocate. However, this statement also provide matters of evidence. In that regard I have read the Environment Court's Code of Conduct for expert witnesses contained in the Environment Court's Practice Note 2014 and agree to comply with it. I confirm the issues addressed in this statement of evidence are within my area of expertise except where I state that I am relying on the evidence of another person.

Scope of Evidence

- 13. This statement provides the context for the key issues raised in the submissions made by those in the equine sector and outlined in the expert evidence. This statement expands on the equine perspective to those issues to assist the Hearing Panel's understanding of what the needs are for the equine sector in the Waikato to prosper.
- 14. This statement addresses a range of issues that are relevant to the submissions made by the equine sector. This is including a background of the equine sector involvement during the development in PC1 and since PC1 was notified. In includes comment on the s42A report where relevant to the equine sector. This statement also provides the context for the statements by equine property owners and the expert evidence.
- 15. The evidence I will provide is structured as follows;
 - a) Background of equine sector involvement in PC1;
 - b) Overview of the equine sectors submission including that of NZTBA, NZ Trainers Association, Rachel Masters (nee Cave), Brigid Verry, Windsor Park Stud, Wentwood Grange and my own submission.
 - c) Review and comment in Waikato Regional Council (WRC) section 42A report;
 - d) A list of changes the equine sector seeks to PC1 as amended by the s42Areport; and
 - e) Appendices as noted in this statement.

Background: Equine Sector Involvement in preparation of PC1

- 16. The equine sector had no formal involvement in the development phase of PC1 including the Collaborative stakeholder group.
- 17. The equine sector was raised during discussions by the CSG but the consensus was that the sector was small and would have little impact on the overall goals of PC1. No consideration or analysis was made by the CSG of the regulatory impact on the equine sector.
- 18. In my role as policy advisor for Federated Farmers held a meeting specifically for the equine sector on PC1 in March 2016 of which there were about 25 attendees (Appendix 1 (page 11)). In May 2016 I made a presentation to the Board of Equestrian Sports New Zealand on the development of PC1 (Appendix 2(page 19)). I also contacted many of the thoroughbred stud farms but had little response. During this time, I used social media to try and raise awareness of PC1 and how it could impact on the equine sector. When PC1 was notified in October 2016 three submissions of the 1000+ had an equine focus, my submission and two individual submissions who have asked me to appear on their behalf (Rachel Masters (nee Cave) and Brigid Verry).

- 19. In December 2018 I was contracted by Waikato Regional Council to provide them with equine sector information and messaging for engagement. I prepared the report Equine Sector Information and Messaging (the Report) (Appendix 3(separate document)). Also, as a result of this contract Dr Chris Rogers of Massey University was engaged to undertake work around nutrient cycling of horses which he will provide in his evidence to this Hearing
- 20. Thoroughbred breeders who were surveyed as part of the Report became aware of the impacts of PC1 and I was asked by their representative organisation New Zealand Thoroughbred Breeders Association to assist them to be involved in the PC1 process. As a result, NZTBA, New Zealand Trainers Association and two studs (Windsor Park and Wentwood Grange) made submissions to Variation 1 of PC1 and further submissions to PC1.

The Equine Sector

- 21. The equine sector is diverse with no umbrella organisation like Beef and Lamb for the dry stock sector and DairyNZ for the dairy sector. There are numerous equine organisations, including NZTBA and NZ Trainers Association which operate under NZ Thoroughbred Racing, Standardbred Breeders and Harness Racing NZ, Equestrian Sports New Zealand which cover the sports of Show Jumping, Eventing, Dressage, Endurance and Para Equestrian, NZ Pony Clubs Association of New Zealand and the Royal Agricultural Association. There are also numerous other clubs and organisations that focus on a specific equine sport or breed. Membership to all these organisations is voluntary unless you wish to compete in a sport that is managed by that organisation. The purpose of these organisations is primarily to grow the particular sport or breed that they are associated with and no specific mandate to represent or advocate or their membership is regards to how they manage their land or their environmental management. The only notable exception is NZTBA which has as its purpose "to encourage, promote, advance generally and ensure co-operative efforts in all matters pertaining to the production and improvement of the Thoroughbred and the interests of Thoroughbred breeders". More information on NZTBA will be provided in the Statement of Justine Sclater General Manager NZTBA.
- 22. The Report highlighted the range of different equine property types and noted that there were others that were not part of the survey. As a result, the management regimes of the various property types also had significant differences.
- 23. A key part of the finding of the Report was the lack of awareness and engagement with WRC and a lack of awareness around potential environmental impact of horses, in particular in regard to nutrient losses. While most were aware of the impacts of other pastoral farming, there was little understanding that horses could have similar impacts. This was primarily due to the view that horses are not production animals rather seen as athletes or companion animals. However, the report showed that many were undertaking practices that provided environmental benefits, such as fencing off waterways, or providing stabling or other standoff areas when paddocks were wet. However, these tended to be done for animal welfare or animal health reasons.
- 24. As far as I'm aware there has been no direct engagement by regional councils in New Zealand with equine organisations in the preparation of Plans under the NPSFM with the exception of the Rotorua Nutrient Management Plan Change 10

for Environment Bay of Plenty. In that case engagement only took place with the lifestyle property owners some of which were horse owners rather than equine specific engagement and there was no wider sector involvement.

Overview of Equine Sectors Submission

- 25. The submissions from the equine sector generally support the aim of PC1 to improve the water quality of the Waikato and Waipa River catchments and that it takes a staged approach over 80 years to achieve the water quality objectives.
- 26. The equine sector generally opposes the regulatory regime proposed by PC1 and how it impacts on equine properties from small lifestyle equine properties to the large breeding operations that operate in the Waikato and Waipa catchments. The key concern of the equine sector is that the rule regime has been developed without consideration or knowledge of the impact of horses on the environment and as a result it will impose constraints that will impact on equine properties viability. The primary issues are:
 - a) The use of stock units as a proxy for environmental impact when there has been no scientific assessment of the veracity of the measure for horses;
 - b) That horses are presumed as a production animal like dairy or drystock when in fact it is being produced as an athlete or kept as a companion animal and the same production drivers do not exist;
 - c) Rapidly growing pastures and the use of nitrogen to achieve that is not an aim of equine property management;
 - d) The use of Overseer as a regulatory tool for equine properties when there has been no assessment of its veracity when used for horses; and
 - e) That there has been no assessment of equine management practices such as stabling and use of supplementary feed and what is appropriate management of horses to minimise impacts on the environment and in particular water quality.
- 27. The equine sector seeks the following changes to PC1;
 - a) That equine businesses and the keeping of horses is withdrawn from PC1 until such time as the provisions fairly and equitable reflect the equine sector including the environmental benefits achieved by;
 - i) Gaining an understanding of nutrient cycling in horses and how effects the environment. With this understanding is Overseer an appropriate tool or is there a suitable alternative or proxy;
 - ii) Gaining an understanding of equine management practices to develop an appropriate suite of equine good management practices that meet the requirement of Good Farming Practice.

Comment on the s42A Report

Rule 3.11.5.2

 For the equine sector the critical amendment proposed in the s42A Report is Rule 3.11.5.2.C.2 and it is therefore appropriate to consider this in the first instance. 3.11.5.2.C.2 provides;

The use of land for farming is a permitted activity subject to the following conditions......

The property area is greater than 20 hectares and either:..... 2. The only farming activity occurring on the property is the raising, training or housing of horses; or......

- 29. The equine sector supports this amendment for this Plan Change as it will allow;
 - a) The sector in conjunction with WRC to undertake work to get a better understanding of nutrient cycling in horses and nutrient losses from equine properties. This work has started and will be presented in the evidence of Dr. Chris Rogers
 - b) To work with the various equine sector groups to develop a suite of Good Farming Practices appropriate to the equine sector. This work has started and an early outline is attached as Appendix 4(page 24).

It is intended that this work will be completed within the life of PC1.

30. The one concern is whether other stock classes are allowed within the reference to "the only farming activity allowed". On equine properties it is common practice to use sheep or cattle within the equine operation known as "cross grazing" primarily to clean up pastures and manage the worm burden. It is therefore critical that there is an allowance for other classes of stock to be permitted within this provision. This could be done by an amendment to the provision of other stock classes on equine properties.

31. Decision sought; That Rule 3.11.5.2.C.2 is retained. However we seek an amendment to clarify that other stock classes are allowed as part of normal equine property management is permitted on equine properties under this Rule.

32. In regard to Rule 3.11.5.2. for properties under 20ha horse properties are not specifically provided for and will be a permitted activity if comply with the standards of the rule. However, we have concern with Rule 3.11.5.2.A.2D which provides;

"No feedlots or sacrifice paddocks are used on the property"

There is no definition of feedlot in PC1 or the Waikato Regional Plan. Racing training establishments are generally under 20ha and generally intensive systems that where horses will spend most if not all of their time stabled or in yards often sand based unless they are being exercised. We consider that such establishments could well fit a definition of feedlot even if unintended.

33. Decision sought; That Rule 3.11.5.2.A.2D be amended to; "No feedlots or sacrifice paddocks are used on the property. This does not include horses stabled or kept in yards"

- 34. We also consider there needs to be clarification of what is a sacrifice paddock. That is, when does a paddock that becomes muddy due to heavy overnight rain become a sacrifice paddock? What is the time period for keeping stock in a paddock that is muddy become a sacrifice paddock? We consider that a definition would be useful guidance and provide the necessary certainty for a permitted activity rule.
- 35. Decision sought: That a definition is provided for sacrifice paddock.

36. Rule 3.11.5.2 as described in the s42A report does not have a minimum property size provided. As written 3.11.5.2.A applies to all properties under 20 hectares regardless of the size. We consider that a minimum size property needs to be included and propose that it is 2 hectares as per the CSG recommendation for minimum property size.

37. Decision sought; - that 3.11.5.2.A is amended tothe property area is greater than 2 hectares and less than or equal to 20 hectares....

Overseer

- 38. In preparing the Report (Appendix 3) for several of the properties we were able to gather enough data to run Overseer. The data was run through Overseer by Dr. Debbie Care and will be presented in her evidence. The results showed that Overseer in its current format is not able to model nutrient losses from equine properties with any reliability. This is noted in paragraphs 63 and 69 of the s42A Report.
- 39. As a result of this and in conjunction with WRC, Dr. Chris Rogers Massey University, was engaged to undertake a review of known information on nutrient cycling in horses. His results will be presented in his evidence. A key difference of horses is that they are a mono gastric animal not ruminant and Overseer is developed for ruminant animals only. The S42A report notes this in paragraph 63.
- 40. The equine sector along with WRC is committed to and will be undertaking further work and research to better understand nutrient losses from equine properties and how they may be accounted for.

Policy 1

41. In regard to 3.11.3.1.a1 the equine sector supports that all farming activities to operate at Good Farming Practice or better. Notwithstanding the equine sectors support of Rule 3.11.5.2.C.2 as stated above it is working to develop a suite of appropriate environmental practices appropriate to the equine sector and will meeting the Good Farming Practice requirements. As noted above the equine sector has started developing equine specific environmental Good Management Practices.

Policy 5

- 42. Policy 5 recognises that a staged approach is required and that everyone will need to contribute to achieving the water quality attribute states, that some changes in practices need to start immediately and that the rate of change will need to be staged over the coming decades to minimise social, economic and cultural disruption. The equine sector supports the proposed amendments in the s42A report.
- 43. The equine sector recognises it needs to get a better understanding of the impact of horses in the environment. The key issues are outlined in the evidence of Dr. Chris Rogers. This work will provide a better understanding of nutrient cycling and what needs to be done if anything to resolve the issues that are described in

the evidence of Dr. Debbie Care in regard to the use of Overseer for equine properties.

44. The equine sector is also working to develop an equine specific set of environmental Good Management Practices as mentioned above.

Schedule A

- 45. We consider that Schedule A that requires that properties to register with Waikato Regional Council and provide baseline information on the property and how it is managed is a critical part of PC1. There is currently no robust data for the equine sector. While the NZTBA and NZ Trainers Association are able to provide reasonable data of their members there is little usable information on the rest of the equine sector. Sport horse membership organisations such as Equestrian Sports NZ and NZ Pony Club Association could provide the number of members but cannot provide the total number of horses they own or how they manage their properties. There are a large group of horse owners who have no affiliation to any group or alternatively have affiliation to several groups so that using this data could lead to double counting.
- 46. We do not agree the proposed increase from 2 to 4 hectares as the threshold for the collection of information will occur under Schedule A. While we agree that the threshold at 2 hectares increases the burden on Waikato Regional Council it is our view that;
 - a) In some subcatchments there is a significant proportion of land that is held between 2 and 4 hectares, particularly subcatchments close to urban areas. In these subcatchments the management of these smaller properties will be important to achieving the attribute targets of the subcatchment;
 - b) The information will need to be collected at some point in the 80-year time frame so why not start now;
 - c) It "reinforces the notion that everyone is part of the problem, everyone needs to be part of the solution";
 - d) Given that everyone needs to exclude stock from waterbodies (Schedule C), having all properties over 2 hectares registering under Schedule A will make it easier for Waikato Regional Council to identify these properties with waterbodies and ensure the appropriate action is taken;
 - e) A significant number of those properties between 2 and 4.1 hectares will be equine properties and for the equine sector to get a better understanding of who and how owners are managing and utilising their land it is imperative that this data is collated.

47. Decision sought; - That Schedule A threshold for the registering of properties remains at 2 hectares.

48. Schedule A 5(f) requires that

.....owners must provide

Where the land is used for grazing and no NRP is required under this Plan the annual average and maximum stocking rate of animals grazing on the land

49. Dr Chris Rogers will provide evidence that the current stocking rate calculations as provided in Definitions; Stock Unit, page 85 Officers Block 2 Track Change Recommendations, which is an extrapolation of sheep as 1 stock unit is essentially flawed and without further research should not be relied upon for horses.

- 50. While we accept that the number of horses on a property, both the average and annual numbers is useful information, until there is a more robust understanding, no weight should be given to the stocking rate number for horses based on the current stock unit calculation.
- 51. Decision sought; that for Schedule A 5(f) that annual and maximum horse numbers is collected rather than horses reflected as a stocking rate using stock units and that 5(f) is amended to reflect as such.

Schedule C

- 52. Schedule C provides for stock exclusion from waterbodies. The equine sector considers that stock should be excluded from waterways and supports the provision. We consider it requires clarification that Schedule C applies to all water bodies on all properties regardless of size. This is because all other rules and schedules in PC1 apply to a minimum size of property that the provision applies to, whilst Schedule C is silent.
- 53. Decision sought; that Schedule C is amended by inserting that Schedule C applies to all waterbodies on all properties regardless of property size, or words to that effect.

Other Matters

54. As the equine sector strongly supports the retention of 3.11.5.2.C.2 as proposed in the s42A report with amendments provided above, we have not given consideration of other matters in the PC1 including, cultivation, grazing of slopes, Farm Environment Plans. The work that is being planned to better understand nutrient loss from equine properties and the development of equine specific Good Management Practices will consider these issues in an equine context.

Decisions sought

- Decision sought; That Rule 3.11.5.2.C.2 is retained. However we seek an amendment to clarify that other stock classes are allowed as part of normal equine property management is permitted on equine properties under this Rule.
- That Rule 3.11.5.2.A.2D be amended to; "No feedlots or sacrifice paddocks are used on the property. This does not include horses stabled or kept in yards
- That a definition is provided for sacrifice paddock.
- That 3.11.5.2.A is amended tothe property area is greater than 2 hectares and less than or equal to 20 hectares....
- That Schedule A threshold for the registering of properties remains at 2 hectares.

- That for Schedule A 5(f) that annual and maximum horse numbers is collected rather than horses reflected as a stocking rate using stock units and that 5(f) is amended to reflect as such.
- That Schedule C is amended by inserting that Schedule C applies to all waterbodies on all properties regardless of property size, or words to that effect.

Sally Linton

23 April 2019

APPENDIX 1























<complex-block>

















23/04/2019





Unlikely to affect equine Change of land use from: a) Indigenous vegetation or plantation production forestry to animal farming or cropping, OR b) drystock to dairying (milking platform) from date of notification until 10 years after Plan Change 1 operative - non-complying activity Commercial vegetable cropping net land area in catchment is capped at current hectares from date of notification until 10 years after Plan Change 1 operative (bearing in mind rotational history) - controlled activity	 Any land ≤ 4.1 ha or, Grazing land: ≤ 8 stock units/ha or, Non-grazing land: ≤ 75kg N applied /ha/yr and Not commercial vegetable production
	Permitted activity Note: Horse approx 10 -12 stock units
Heddilly Siven Wolcott Handles	Proceeding Winners













APPENDIX 2









23/04/2019



If not you then who?
Lead for equine sector?
Conduit for information?
Member of FF?
Who should/could take the advocacy role for the equine sector?

18

23/04/2019



APPENDIX 4

Equine Good Management Practice

Pasture Management

What's the problem

Poor pasture management or over grazing, allowing pugging and soil compaction by putting horses on water logged soils not only results in reduced quantity and quality of grass but leads to increased soil erosion with sediment and phosphorus entering waterways from overland flow, but increases nitrogen and microbial pathogen losses from dung and urine entering water including ground water.

Bare soil encourages weeds, increases sediment loss to waterways by overland flow

"Side Text box – definition example of pugging – with photo" "Side Text box – what happens when soil is compacted"

Benefits of good pasture management

Good pasture management reduces feed costs through increased pasture productivity and reduces veterinary and health costs dues by reducing the likelihood of foot abscesses, mud fever and the like.

Good pasture management also has environmental benefits by reducing contaminants of sediment, nitrogen, phosphorus and microbes entering water.

Good pasture management will

- Maintain pasture cover
- Reduce soil erosion
- Improve soil structure
- Slow down the rate of overland runoff
- Store moisture to prolong the growing season
- Reduces the ability of weeds to grow

How to maintain good pasture

Never over graze – pasture should not be grazed lower that 5cm and then not grazed again until 10 - 15cm. Continual over grazing will cause pasture to become less productive and die. Not grazing too short means the grass will recover more quickly and will be able to be grazed again sooner.

Pastures need active management to prevent over grazing. This can be done by

- Rotation
- Break feeding

- Keep horses off saturated and rain soaked soils have yards or stables well away from waterways.
- Dung removal or harrowing
- Topping or cross grazing

Horses are selective grazers and keeping horses continually in one paddock (known as set stocking) will create areas that are over grazed (also known as lawns) and areas that are not grazed where horses urinate and manure (known as latrine areas or roughs). This type of grazing pattern is not seen with other livestock such as sheep and cattle which tend to graze paddocks more evenly.

Rotational grazing and break feeding

Rotational grazing moving horses into new paddocks when minimum grazing height is reached or break feeding will assist in achieving better pasture utilisation and prevent overgrazing.

Use permanent fencing for the property perimeter to ensure that an accidental loose horse is safely contained on your property. If using a rotational grazing system, it's usually easiest to separate grazing areas with temporary electric fencing. Portable electric fencing is lightweight, inexpensive, and easy to move for pasture rotation.

Harrowing

Harrowing breaks up and spreads the manure piles to facilitate their breakdown so that grass plants aren't smothered, and plants can better use the nutrients and organic materials from the manure and will grow faster.

Harrowing or dung removal has horse health benefits by reducing the worm burden.

Harrowing also has environmental benefits as it reduces the risk of effluent flow of manure and the microbial contaminants entering waterways.

On larger properties harrowing will be done with a tractor, however on smaller lifestyle blocks a ride on lawn mower, ATV or a small 4WD vehicle. There are a wide variety of harrows can be purchased from farm and tractor supply stores. A basic harrow can also be simply made from a discarded piece of chain-link fence with a couple of old tires tied down for weight works well. An old, metal bedspring, metal gate or similar item may also work.

On smaller blocks an alternative is to simply spread manure by with a manure fork or collect manure to the dung heap.

Topping and cross grazing

Topping paddocks evens the playing field by cutting the tall plants down to a size where they are more palatable for the horse and encouraging grass plants to produce more leaves, called tillers, thereby making pastures thicker. The best benefit will be achieved when paddocks are harrowed in conjunction with topping. Cross grazing with either cattle or sheep will have a similar effect to topping eating the areas that horses have left. Cross grazing will also reduce the worm burden in pastures.

Equine Good Management Practice

Manure Management

What's the problem

An average horse will excrete around 22kg of raw waste/day(manure and urine). Soiled stable bedding can add another 7kg or more.

Poorly managed manure will contaminate water both ground and surface with nutrients and microbes.

Manure management strategy should include;

- Collection
- Storage
- Disposal or use

in a manner that prevents run off and contamination to waterbodies.

Factors to take into account when developing a strategy

- Number of horses
- Labour required
- Equipment required
- Location of water bodies
- Near surface ground water (high watertable)
- Runoff/drainage
- Soil type
- Time of year and weather conditions don't go into winter with a full dung heap

Practices

- Remove manure and soiled bedding from stables, yards and paddocks
- Or harrow paddocks to break manure up and remove from high use areas (roughs) which will reduce potential run off and leaching. (see pasture management on harrowing practices)

Manure storage area

- Water tight surface to prevent seepage to groundwater
 - o Clay
 - o Concrete
- Ensure storage area well away from waterways bores/wells at minimum xx meters
- Storm water diversion to minimise run off
- Cover manure area with roof or tarpaulin to minimise run off
- Create diversion for runoff to vegetation filter

Disposal or Use

Compost manure on site; or Have manure removed by contractor or others (nurseries, home gardeners etc)

Note: Spreading fresh (non composted manure) can

- Increase spread of unwanted weeds
- Expose horses to parasites
- If spread near streams can contaminate water by overland flow

To compost manure

Need to have a balance of

- Moisture
- Oxygen
- Microbes
- Heat
- Carbon nitrogen ratio 30:1 optimal
- Made up of
 - o Manure
 - o Bedding
 - o Yard waste
 - o Foodscraps

• Time

Passive composting can take up to 2 years depending of conditions.

For active composting using bins with smaller amounts will speed up to process. Requires aeration (turning). Active composting will take 1 -3 months

Composting benefits

- Decreases volume
- Reduces risk of weed seed survival
- Kills parasites

Composted manure can be used as

- Fertiliser
- Soil conditioner
- Stabilises light soil to resist erosion and reduce run off
- Lightens heavier soil by allowing more air and water to penetrate the surface
- High level of organic matter improves the ability to retain water and thereby reduce run off

Spreading composted manure should be analysed for nutrient composition and applied at a rate to maximise plant uptake and minimise potential for run off to waterways. Apply when plants are actively growing and ground is firm (spring/autumn)

Equine Good Management Practice

Fence off Waterways

What's the problem

Horses and other stock having direct access to waterways can impact on them by

- Sediment entering from bank erosion
- Direct contamination of water from dung an urine
- Trampling or removal of vegetation in riparian areas, causes stream bank erosion and sedimentation
- Removal of vegetation that filters and absorbs contaminants from run off

Allowing horses access to waterways also increases the risk of injury.

What to do

- Fence horses out of water including riparian areas to prevent direct deposit if waste to water and riparian area damage
- Flat paddocks fences should be setback a minimum of 1 meter, steeper areas (over 15 degrees slope) a minimum of 5 meters.
- Fences need to be stock proof for the class of stock on the property. However temporary electric fences are adequate for horses and cattle and are useful in areas that are prone to flooding.
- Ensure you have a water source for your animals preferably set away from waterways to discourage them from seeking water from drains and streams.

"side box – definition of what is a riparian margin – the area of land between a water body and land. Planting the riparian margin will minimise contamination of the waterbody from contaminants such as nutrients, sediment and microbes. Size of the riparian margin will be dependent of the slope of the land and rate of overland flow"

Riparian areas (the area between the fence and the waterbody) needs to be vegetated to stabilise the soil, increase the filtration and reduce run off. Pasture grasses are excellent vegetation for a riparian area as are native grasses and flaxes.

Do not spray the riparian area as this removes the filtration and stabilisation benefits. If vegetation removal is required for drainage flow only spray the base of the drain with a water safe herbicide.

If drains need to be cleaned from time to time to remove sediment build up consider the access required when constructing fences.

For grassed riparian areas only graze when dry(summer) or to prevent damage to banks. If riparian areas are to be grazed using a lighter class of stock (eg sheep) is preferable to minimise damage

Equine Good Management Practice

Nutrient Management

Manage the amount and timing of fertiliser inputs taking account of all sources of nutrients, to match plant requirements and minimise risk of losses.

"Side text box – what is a nutrient plan(budget)"

Manage nutrients from all sources including soil, supplementary feed, and other organic sources (manure and plant residue)

Fertiliser Management

What's the problem

Incorrect rates and application of fertiliser can cause leaching to ground water and losses to open water.

Rapidly growing pasture particularly in spring can cause behavioural and metabolic issues in horses. Appropriate pasture species and managing fertiliser inputs can reduce the impact.

What to do

Regular soil testing to determine pasture nutrient needs – once a year. Consultants and advisors should be certified nutrient management advisors

Apply fertiliser strategically that meets plant requirements and avoid adverse environmental impacts

Use spreading contractors that are Spreadmark[™] accredited

Do not apply when heavy rain forecasted or ground is saturated

Do not apply when windy

Consider fertilising as a split dressing (spring and autumn) to reduce the risk of leaching and runoff and ensure greater utilisation of nutrients by pastures.

Maintain records of fertiliser applications including product, application rate, date and paddocks applied.

Nitrogen is generally not used on horse pastures as lush pastures particularly in spring can cause behavioural and metabolic issues and in severe cases colic or laminitis.

Equine Good Management Practice

Critical Source Areas