

Monaro Seasonal Outlook (March 2012)

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Introduction

You will recall the December outlook report presented a tactical analysis using GrassGro exploring the outlook for summer and likely impacts on the enterprise. This time a similar approach is used to shed some light on likely opportunities and issues for the coming autumn / early winter. Unfortunately the extremely wet seasonal conditions have conspired to make it difficult for many MFS members to attend the planned field day at Redcliff but I hope this report will go somewhat toward making up for this. This analysis will again focus on the Cocksfoot based pasture system at Redcliff (Ned and Annie Kater's) which runs 4 merino ewes/ha (50kg SRW) lambing in August and selling young sheep as hoggets.

Method

GrassGro has the capacity to perform tactical analyses based on the current pasture, animal and soil conditions by applying historical rainfall for the season of interest. The current conditions are determined by running the model up to the current date using real daily weather records and forward projections presume the weather for the coming season is equally likely to be similar to weather for the same period in any year in the historical record. Weather data is sourced from the Silo website data drill. This report will also explore projections for animals that have not performed as expected based on the modelled pasture growth. Many producers have found ewes are not as fat as might be expected given the season and this is probably attributable to high water content in pastures, suppressed appetite due to the extraordinary number of wet days and also probably worm challenges that have been difficult to manage.

What GrassGro says about this summer.

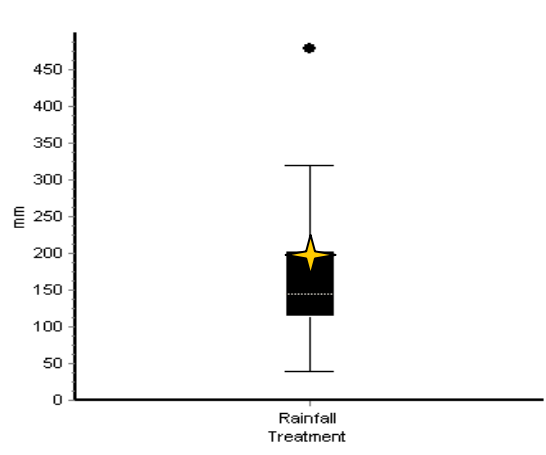
As with the December report it is often useful to compare what actually occurred against the model projections to get a feel for how well the season progressed compared to its potential rather than just against the long term distribution.

Figure one shows the actual summer rainfall received (represented by the star) was just below the top 25% of years since 1970. However

December rainfall at Redcliff (22.9mm) was the ninth driest since 1970.

January rainfall was about the median at 42.6mm median while February rain totaled 141mm and is the 5th wettest since 1970 and is 85mm higher than the median.

Figure 1. Box plot of summer rainfall totals for Redcliff between 1971 and 2010.



(2011-12 shown as a star)

Many have also observed this summer to be particularly mild so it may also be useful to look at the data to see how it ranks.

Figure 2. Weekly average temperatures for summer 2011-12 compared to historical records since 1970.

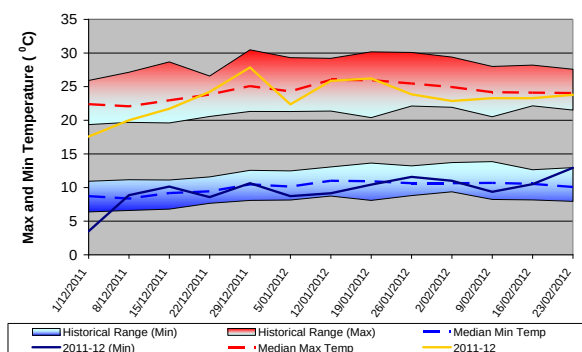
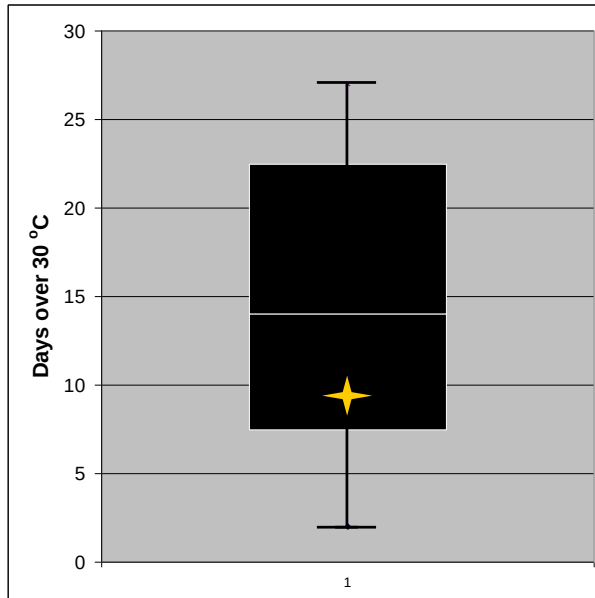


Figure two shows that while the first week in December was unseasonably cold (anyone who had planted out their pumpkins will vouch for that) for the rest of summer, temperatures hovered around or just under the median. Also we did not experience the extremes of temperature of some past years. Figure three shows a box plot of the

number of summer days over 30°C for the period from 1970. The star indicates 9 “hot days” for the summer of 2011-12 which still lies in the third quartile. Overall the summer was cool but not unusually so.

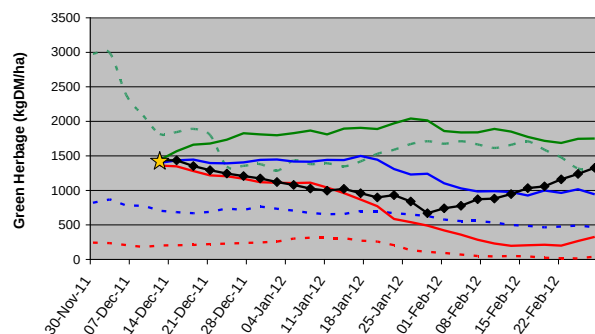
Figure 3. Number of days over 30°C in summer 2011-12 compared to historical records since 1970



Modeled Pasture growth

Projections from the 11th of December (Figure 4) indicated a 90% chance that green herbage would remain above the median until the 23rd of January. The modeling using actual rainfall for the recent summer shows that the green herbage remained above the long term median right throughout the summer. Dry conditions through December and early January meant that green herbage tracked close to the projected 10th percentile however good rainfall in the second half of summer generated a spurt of growth bringing green herbage mass back above the long term 90th percentile by the end of February.

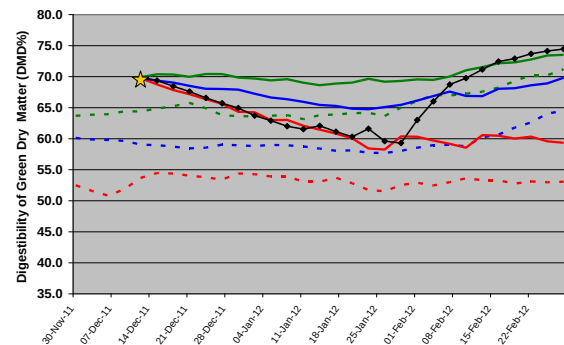
Figure 4. Actual summer green herbage mass (—◆—) for 2011-12 vs historical percentiles (- - -) and projected 2011 percentiles (—)



Along with good late summer pasture growth comes a boost in feed quality with digestibility finishing close to the highest possible projection.

(Figure 5) To have such high quality and quantity at the same time is very unusual.

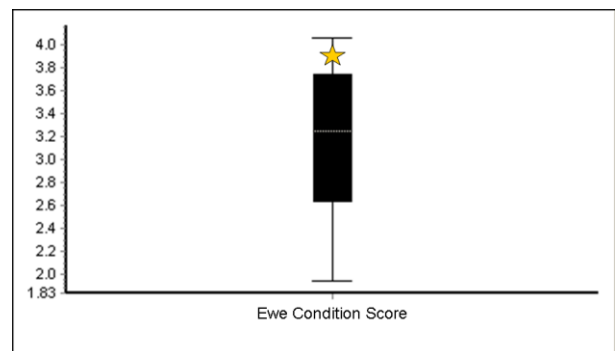
Figure 5. Actual green herbage digestibility (—◆—) for 2011-12 vs historical percentiles (- - -) and projected 2011 percentiles (—)



Animal Performance

GrassGro predicts that the extraordinary feed conditions in late summer will have caused ewes to have gained even more condition. Figure 6 shows actual ewe condition score approaching 4 and lies in the first quartile of values for the time of year. Anecdotally the actual condition of ewes across the district may be somewhat lower than this probably due to the large number of wet days, excessive days off feed awaiting shearing and also the very high moisture content of pastures (>85%) suppressing intake.

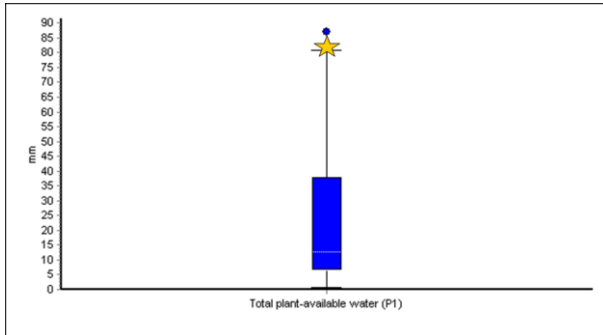
Figure 6. Ewe condition at the end of summer 2012 compared to the long term distribution.



Autumn Projections

The starting point for the autumn projections is the 12th of March after receiving some record breaking rainfall events in late February and early March. Figure seven indicates plant available water on the 12th of March is around the all time historical high for the time of year. In fact the modeling indicates soil water is above field capacity causing some suppression in pasture growth rates due to water logging in late February and early March.

Figure 7. Plant Available Water on the 12th of March as compared to the historical range.



Using the modeled animal, pasture and soil conditions as at the 12th of March, another tactical simulation was done to look at projected seasonal conditions through to the end of June.

Figure 8. Outlook for green herbage availability March to June

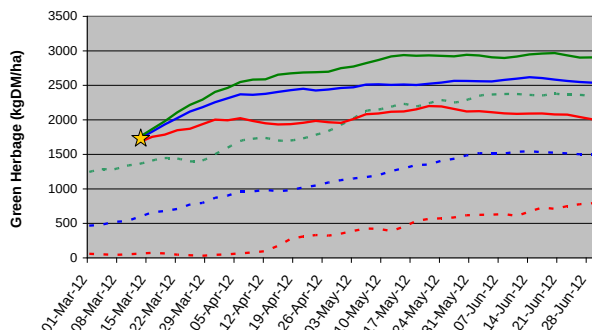
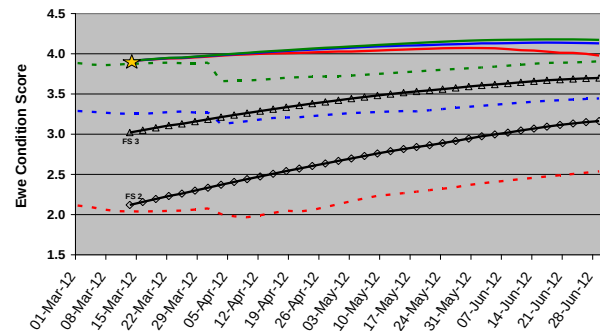


Figure eight shows the projected green available herbage from now until the end of June. Dotted lines are the historical percentiles for each day of year while the solid lines are the projections for this season. Because we are starting well above the 90th percentile median there are even odds (50% chance) that green available herbage will remain above the 90th percentile throughout the period. If we take the seasonal forecast into account then in fact there is probably a greater than even chance of this occurring.

Based on a starting ewe condition score of 3.9 (Fig 9) ewe condition will be above 4 score from early April onward. Also shown is the median ewe condition score path for ewes that are currently 2 or 3 score. Three score ewes are likely to exceed and remain above the long term median from early April while two score ewes although below the

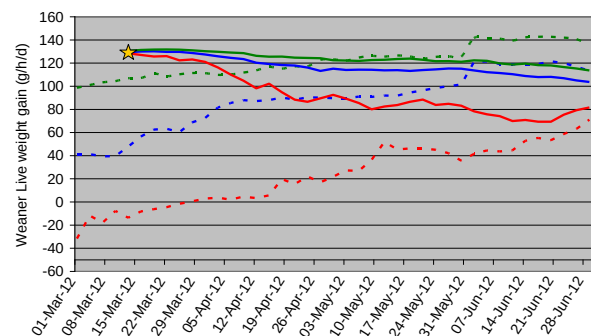
median position should exceed three score by the end of June.

Figure 9. Outlook for ewe condition March to June.



GrassGro projections for weaner performance indicate that weaner growth rates should remain above 100g/h/d for the duration of autumn. Whether this occurs may depend on how inclement the weather proves to be and also on the successful management of worms.

Figure 10. Outlook for weaner live weight gain.



Weaners that have suffered due to the wet conditions should stage a significant recovery pending some more stable autumn weather and effective worm control.

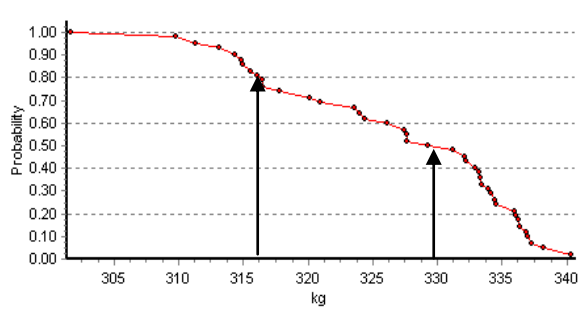
Potential for trading stock.

There is generally surplus feed for the stocking rate being modeled and the quality of this feed indicates a significant opportunity to trade and finish young stock. Results of an additional tactical simulation, running the breeding ewes on half the available land area, indicates they would still reach the end of June above condition score 3.5.

To test the performance of steers on the modeled pasture a tactical simulation was run for a trade of British breed weaned steers at 9 months old and 250kg on the first of April and run at 2 steers per ha. Figure 11 shows that there is an 80% chance that the live weight of these animals would be greater than 315 kg at the end of June. This equates to an average daily gain of 714 g/h/d. There is a 50% chance the weight gain would exceed 870g/h/d for a live weight of around 330 kg at the end of June. This scenario indicates the potential to trade into young stock with a view to keeping them over winter to take advantage of the

usual excess of spring pasture. The economics of this decision will be entirely dependent of being able to buy these animals at a reasonable price. Never forget that pasture utilization in the absence of profit is pointless. Reducing the steer stocking rate to 1 steer per ha did not significantly change the probability distribution indicating that the limits to steer growth rate relate to declining feed quality over the period to the 30th of June rather than any issue of herbage mass limitations.

Figure 11. Probability of trade steer live weight exceeding target levels by the end of June



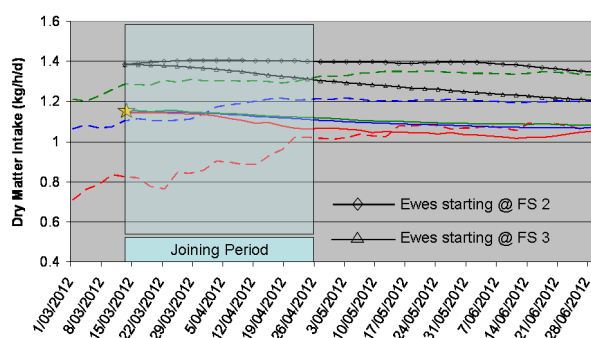
A trade involving cattle is also likely to have some additional benefits from cross grazing with sheep to prepare low worm lambing and weaning paddocks in the coming production cycle.

Joining Issues.

The extraordinary pasture conditions, while useful for rebuilding fat score in breeding ewes, also hold significant risks for conception rates for the current joining.

Figure twelve shows the anticipated dry matter intakes of ewes grazing the projected pasture and indicates that for the modeled ewes intakes should be below the long term median during the joining period. However for ewes joining in lighter body condition intakes are likely to be at record levels (around 1.4 kg/h/d). The fatter ewes eat less due to hormonal feedbacks which suppress appetite whereas the leaner ewes have a high appetite and this year almost no limitation to satisfying this appetite.

Figure 12. Likely dry matter intake of breeding ewes entering joining in different condition scores.



Research by Parr and others has shown that excessive intake around day 11 – 12 after conception leads to embryonic death and a return

to service. The level of feeding which engendered this effect was in the order of twice maintenance. The impact arises from excessive metabolic clearance of the hormone Progesterone which is the hormone responsible for retaining pregnancy. If blood progesterone levels fall too low pregnancy can be lost. The endocrinology of ewes which have a single ovulation means they already have lower Progesterone levels and are more subject to the "Parr effect".

The GrassGro modeling of the lighter conditioned ewes indicates intake levels of twice maintenance or more especially in the 2 score ewes. It will certainly be tempting to try and get some flushing effect in these lighter ewes by allowing them access to the best feed however because of the Parr effect this may be counter productive this year. Because the risk period is around day 11-12 post conception the best management this year may be to put ewes on the very best feed for the first ten days after joining and then move them onto poorer quality feed (probably in unfertilized native paddocks) for the remainder of joining until least a fortnight after the end of joining.

The Parr effect was observed on the Monaro last year in some flocks where more than double the normal number of dries was seen while twinning rates were actually higher. The risk is higher this year especially for ewes in poorer condition since a greater number of single ovulations might be expected leaving a greater proportion of the flock at risk.

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