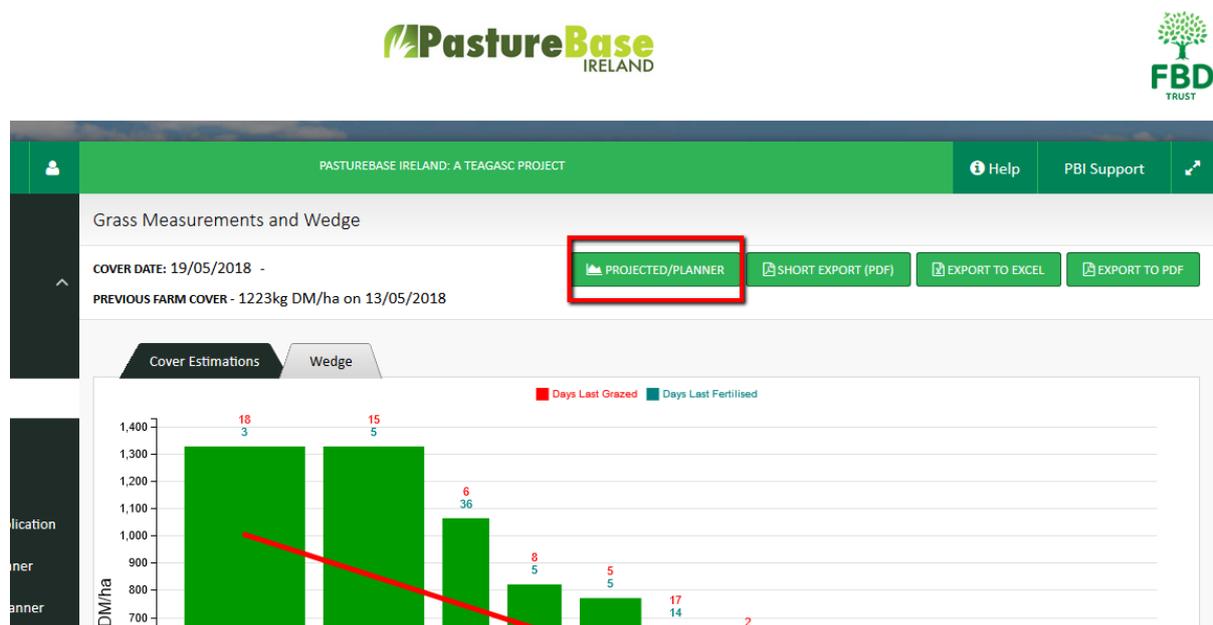# What is a Projected Wedge/Planner

The grass wedge tells the farmer how much grass they have available on the farm today and what is the current demand for grass. The purpose of the 'Projected Wedge/Planner' is to allow the farmer to project this information into the future by entering predictions for grass growth, stocking levels and grass consumption rates and the application presents the farmer with a view of their situation 7 days into the future.

This new option is available at the top of the Wedge screen called "Projected/Planner". It opens a new screen that has a similar layout to the main wedge screen. This screen will facilitate additional input options for planning.

This option will only be available on the most recent complete Grass Wedge and it will only be available on the Wedge screen when all edits are fully saved.

If you have recorded a farm cover today and your farm is growing on average of 50 kg DM/ha,

you then click on 'Projected/Planner' button at the top of the wedge screen.

It defaults to creating a projected wedge for 7 days forward using this average growth rate of 50kg DM/ha.

It is possible to create a projected wedge for less than 7 days and it is also possible to change the projected growth rate up or down from the original value for 50kg DM/ha.

It is possible to look at different scenarios in the Projected Wedge screen such as

- What if stock numbers go up or down
- What if stock intake increase or decrease
- What if you close some paddocks for silage
- What if the growth rate varies up or down

After inputting each change click 'save and update wedge'

These are all 'what if' scenarios you are looking at on the projected wedge and will have no impact on your current Grass Wedge.

If at any time you want to return to 'Original Projection' click on that green button above the projected wedge.

You can also click on 'back to wedge' exit the projection screen and return to your most recent Grass Wedge

What metrics are used in the calculation?

No of Days: The projected wedge will allow for up to 7 days in the future. The value in the 'No of Days' input field will default to 7 days but the user can change this value to a number between 1 and 7 days. The user cannot enter a value greater than 7 or less than 1. The projected Wedge is updated when the "Save and Update Wedge" option is selected.

Growth Rate: The default growth rate for the projected wedge is the current growth rate CGR (from the most recent cover).

Alternatively, the farmer can enter a different average predicted growth rate for the farm – Predicted Farm Growth (PFG). The current wedge has an average growth for the farm (CGR). A percentage difference in growth (PDG) is calculated by doing this calculation: PDG= (CGR-PFG) /CGR*100).

For each paddock that has a daily growth rate in the current wedge, it is altered by the value of the PDG. This can be a positive, a negative or zero value.

Example; if a farm has an average growth rate of 50kg DM/ha this week for the whole farm and the farmer enters a predictive growth rate of 75kg DM/ha. This is a 50% increase in growth. Every paddock with a previous growth rate, the growth rate used in the projection will be 50% higher. If the reverse is the case then the growth for each paddock is decreased by this amount.

Paddocks grazed in the last cover period will have no growth rate in the current wedge so an average growth rate is used. **This average growth is calculated using only paddocks where the cover in the current measurement was less than 600kg DM/ha/day.**

Paddock	Area	Cover on 01/08	Cover on 08/08	Real Growth	Predictive Growth (50% increase)
1	1	400	470	10	15
2	2	500	640	20	30
3	3	800	1010	30	45
4	1	1500	200		33
5	2	50	300	35.7	53.6
6	3	150	400	35.7	53.6
7	2	400	700	42.8	64.2
8	1	700	1100	57.1	85.6
Average				33.0	

The user is projecting a wedge from 08/08 forward for 7 days. Paddock 4 has no growth between 01/08 and 08/08. The growth to use for paddock 4 is the average growth of paddocks 1, 5 and 6. Paddock 3 is excluded because 800 on 01/08 is above the 600 cut off. Average growth = ((10*1) + (35.7*2) + (35.7*3))/6 = growth of 32.9 where 1,2,3 are areas to make a weighted average and 33 rounded to 0 decimals.

Test Case

Actual farm growth rate = 36kg DM/ha/day

Predicted farm growth rate = 36kg DM/ha/day

Actual farm growth rate = Predicted farm growth rate, the difference between growth rates is 0%, so the same growth rates are used for individual paddocks

Paddock	Cover	Area	Growth Rate
P5	900kg DM/ha	3ha	42.9kg DM/ha/day
P4	800kg DM/ha	3ha	42.9kg DM/ha/day
P3	600kg DM/ha	2ha	28.6kg DM/ha/day
P2	500kg DM/ha	2ha	28.6kg DM/ha/day
P1	400kg DM/ha	2ha	28.6kg DM/ha/day

Residual Cover: 0kg DM/ha/day
Herd Demand: 36 cow * 18kg DM/day = 648kg DM / day

DAY 1
P5 = (900 - 0) * 3ha) - 648)/3ha + 0 + (42.9/2) = 705.45kg DM/ha   (ROUNDED TO 705) --- THE GROWTH IS HALVED BECAUSE COWS IN THIS PADDOCK ON THIS DAY
P4 = 800 + 42.9 = 842.9 = 843kg DM/ha
P3 = 629kg DM/ha
P2 = 529kg DM/ha
P1 = 429kg DM/ha

DAY 2
P5 = (705 - 0) * 3ha) - 648)/3ha + 0 + (42.9/2) = 510.45kg DM/ha   (ROUNDED TO 510) --- THE
GROWTH IS HALVED BECAUSE COWS IN THIS PADDOCK ON THIS DAY
P4 = 843 + 42.9 = 885.9 = 886kg DM/ha
P3 = 657kg DM/ha
P2 = 557kg DM/ha
P1 = 457kg DM/ha

DAY 3
P5 = (510 - 0) * 3ha) - 648)/3ha + 0 + (42.9/2) = 315.45kg DM/ha   (ROUNDED TO 315) --- THE
GROWTH IS HALVED BECAUSE COWS IN THIS PADDOCK ON THIS DAY
P4 = 886 + 42.9 = 928.9 = 929kg DM/ha
P3 = 686kg DM/ha
P2 = 586kg DM/ha
P1 = 486kg DM/ha

DAY 4
P5 = (315 - 0) * 3ha) - 648)/3ha + 0 + (42.9/2) = 120.45kg DM/ha   (ROUNDED TO 120) --- THE
GROWTH IS HALVED BECAUSE COWS IN THIS PADDOCK ON THIS DAY
P4 = 929 + 42.9 = 928.9 = 972kg DM/ha
P3 = 714kg DM/ha
P2 = 614kg DM/ha
P1 = 514kg DM/ha

DAY 5
P5 = (120 - 0) * 3ha) - 648) = -288 < 0 ===> P5 IS REDUCED TO RESIDUAL, WHICH IN THIS CASE IS 0.
At the end of the day we add the growth, but, as the cows have been on this paddock a fair amount
of time today, the growth is halved.
P5 = 0 + (42.9/2) = 21.45kg DM/ha   (ROUNDED TO 21)

The demand for this day becomes 288 (this is what is left from P5)

P4 = (((972 - 0) * 3ha) - 288)/3ha + 0 + (42.9/2) = 897.45kg DM/ha   (ROUNDED TO 897) --- THE
GROWTH IS HALVED BECAUSE COWS IN THIS PADDOCK ON THIS DAY
P3 = 714 + 28.6 = 742.6 = 743kg DM/ha
P2 = 643kg DM/ha
P1 = 543kg DM/ha

DAY 6
P5 is finished. We now calculate the growth based on the formula from the documentation

New Growth for P5 = (Sum of multiplication of paddock growths and area from measured cover
where cover<600kg DM/ha)/(Sum of area of the covers from measured cover)
        = (28.6kg DM/ha * 2ha) + (28.6kg DM/ha * 2ha) / (2ha + 2ha)
        = 114.4kg DM/ha / 4ha
        = 28.6kg DM/ha/day (Rounded to 29kg DM/ha) ==>THIS WILL BE THE GROWTH FOR THIS
PADDOCK UNTIL THE END OF THE PROJECTED PERIOD

==> P5 = 21 + 29 = 50kg DM/ha

P4 = (897 - 0) * 3ha) - 648)/3ha + 0 + (42.9/2) = 702.45kg DM/ha   (ROUNDED TO 702) --- THE GROWTH IS HALVED BECAUSE COWS IN THIS PADDOCK ON THIS DAY
P3 = 743 + 28.6 = 771.6 = 772kg DM/ha
P2 = 672kg DM/ha
P1 = 572kg DM/ha

DAY 7
P5 = 50 + 29 = 79kg DM/ha
P4 = (702 - 0) * 3ha) - 648)/3ha + 0 + (42.9/2) = 507.45kg DM/ha   (ROUNDED TO 507) --- THE GROWTH IS HALVED BECAUSE COWS IN THIS PADDOCK ON THIS DAY
P3 = 772 + 28.6 = 800kg DM/ha
P2 = 700kg DM/ha
P1 = 600kg DM/ha

Paddock	Cover
P5	79kg DM/ha
P4	507kg DM/ha
P3	800kg DM/ha
P2	700kg DM/ha
P1	600kg DM/ha