

OverseerFM version 6.5.2 data input protocols for Lake Rotorua catchments



Data input protocols ensure that Overseer analyses submitted to Council for regulatory purposes are built using a consistent methodology. This ensures that differences in nitrogen losses between analyses are a result of the changes in the farm system and not the geospatial or other data alterations.

The type of analysis and the naming of the analysis enables Council staff to search for the relevant analysis for either consenting or monitoring purposes. This also enables an automated process to compare two analyses reducing both time and cost to the user. The status of the analysis efficiently identifies for Council staff the stage at which analysis review or assessment are at.

Detailed property and catchment GIS data, including a .kml map, is available from Council and is used in building Overseer analyses to ensure a robust and consistent approach to identified input parameters.

Disclaimer

The protocols described here are Bay of Plenty Regional Council's position and do not represent the views of Overseer Ltd in any way.

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OverseerFM

To enable Overseer analyses to be recognised by the landowner, Land Use Advisor (LUA) and BOPRC staff for the purpose for which they were built the following 'FM Naming Convention' and publication statuses should be used:

Farm and analyses naming convention

The table above relates to analyses for PC10 and Rule 11.

Farm Name	Property Identification Number (PIN) Farm Name e.g. 05 01 999 00 Sunny Pastures
Naming Structure – Predictive Analyses* Leave the year field blank	PIN Farm Name NMP Period e.g. 05 01 999 00 Sunny Pastures NMP 1722 05 01 999 00 Sunny Pastures NMP 2227
Naming Structure – Year End	Defined by OverseerFM e.g. Year ending 2019
Publishee's Farm Identifier Structure	PIN e.g. 05 01 999 00
Publishee's Reference	RMYY-xxxx e.g. RM19-0001 Resource Consent Number (this can be added once a resource consent has been granted); PAYY-xxxxx e.g. PA19-00001 Permitted Activity number; LR R7 - FM analysis or annual land use records for properties deemed low intensity

* Predictive analyses do not require Year End data to be entered. This will then ensure that the analysis is categorised as a 'Predictive' analysis' and not a 'Year End' analysis.

Publication statuses of analyses to Bay of Plenty Regional Council

When an analysis is ready to be submitted to BOPRC, whether for a consent application (predictive analysis supported by an NMP), or year-end (consent monitoring) the statuses are defined below.

Status	Used by	Description
Draft/Submitted	Land Use Advisor	When an analysis is published <u>to</u> BOPRC by a land use advisor (or landowner), whether predictive (NMP/Consent application) or year end (monitoring).
Reviewing	Council	Indicates BOPRC has started reviewing the publication and prevents publication of any changes made to the analysis now with BOPRC.
Returned	Council	When an analysis needs updating by a LUA or landowner. BOPRC will alter the status to 'returned' to enable changes to be made and the analysis re-published to BOPRC (and the publication becomes version 2 and so on).
Processed	Council	To identify the future MRTs eg 22-27, 27-32 and 32 onwards that the data was used in the NMP document. These can be amended and republished as draft by the LUA to update for the following NMP document
Closed	Council	Analysis accepted <u>by</u> BOPRC.
Working copy	Council	Staff create and delete working copies often to assess the farm system.

Bay of Plenty Regional Council Protocols on OverseerFM data input

These protocols must be read in conjunction with the OverseerFM User Guides.

Input	BOPRC protocol
Creating a Farm Account	Use Region: Central Plateau.
Creating Blocks	Do not draw blocks per OverseerFM User Guide. Either: Import a map of this farm, select the kml file supplied by BOPRC. You may need to remerge blocks of the same name per the pdf map supplied. ; or Click Create Block, scroll down to bottom of map, Click Save, Enter Block details where applicable from the data attributes supplied by BOPRC. Please note you will still need to enter lats and longs regardless of method used.
Creating Blocks	<u>Grazed tree blocks</u> : Where grazed trees exist on the property, a specific pastoral block should be identified to allow for different management practices and lower pasture productivity. No reference is made to grazed tree blocks in the OverseerFM search help articles but they are an existing block type in many properties in the Rotorua catchment. Note that scattered gorse with stock access should be treated similarly to a grazed tree block. <u>Gorse blocks</u> : Blocks with dense gorse and no practical stock access should be entered as 'Trees and scrub' and native.
Creating Blocks	<u>Wetland blocks</u> : Where a fenced wetland exists on the property, BOPRC protocols require that this is entered as a 'riparian' block, and BOPRC recommends that it is identified as a wetland in the block name. Where a wetland is unfenced, this should be entered as a pasture block with an appropriately reduced level of 'relative productivity',.
Creating Blocks	<u>House blocks</u> ³ : should be entered for ALL properties where there is a house. BOPRC "House block" requirements are; For number of people in house a standard occupancy of 3 people per dwelling is used. Cultivated area: a standard area of 100 m ² cultivated land per dwelling is used. This is then calculated as a percentage of the house block. For a 'house block' that comprises multiple self-contained dwellings, the number of people and area of cultivated land needs to be multiplied by the number of self-contained houses in the block.to be multiplied by the number of houses in the block. <u>Composting Toilet</u> - Do not enter a composting toilet under "Reticulation or Compost" as the sewage management method. Use ' <u>On-site septic tank package</u> '.
Creating Blocks	<u>Effective area</u> : BOPRC does not require raceways and lanes to be blocked out separately i.e. raceways and lanes can be part of adjoining blocks.
Creating Blocks	<u>Distance from coast</u> : In Rotorua the prevailing wind direction is split between the north east and the south west. Consider north east to be the prevailing wind direction and measure the 'distance from coast' from the Bay of Plenty coastline. The distance from the coast is typically between 30 km-60 km for properties within the Lake Rotorua catchment.

Input	BOPRC protocol				
Creating Blocks	<p><u>Climate data</u>¹: For blocks that require Climate data select 'Enter climate location' then enter latitude and longitude from the data attributes supplied by BOPRC.</p> <p>This option enables the user to enter the latitude and longitude for each Overseer block based on the GIS-calculated mid-point for each block.</p>				
Adding soils to the block ²	<p>Select one soil type only. The dominant soil type will be provided by BOPRC in data attributes. If using kmils to create blocks please amend to the one soil type supplied by BOPRC.</p> <p>To enter soil data Click edit block, Click add new soil, tick new S-Map and enter block soil type (sibling name) from the data attributes supplied by BOPRC. Then check that the soil profile details and the soil properties align with the data attributes supplied for the sibling name. Change as required.</p>				
Pasture	<p><u>Topography</u>⁴:</p> <p>The slope for each block is calculated geospatially from the farm block map developed with Council and the landowner's Land Use Advisor.</p> <p>BOPRC data attributes use the following slope categories:</p> <table border="1" data-bbox="368 860 1142 949"> <tr> <td data-bbox="368 860 560 949">Flat 0-7.99°</td> <td data-bbox="560 860 751 949">Rolling 8 -15.99°</td> <td data-bbox="751 860 943 949">Easy Hill 16- 25.99°</td> <td data-bbox="943 860 1142 949">Steep Hill > 26°</td> </tr> </table>	Flat 0-7.99°	Rolling 8 -15.99°	Easy Hill 16- 25.99°	Steep Hill > 26°
Flat 0-7.99°	Rolling 8 -15.99°	Easy Hill 16- 25.99°	Steep Hill > 26°		
Pasture/Crops	<p><u>Plantain</u></p> <p>Significant nitrogen reductions can be achieved with pastures that contain plantain (at this stage limited cultivars*). The significance is dependent on the percentage of plantain maintained within the pasture sward. DairyNZ has developed a guide to assist landowners to calculate the percentage of plantain in the pasture. The guide can be found at this link: https://www.dairynz.co.nz/feed/crops/plantain/assessing-plantain-on-farm/. The webpage includes a link to the template to help calculate % of plantain on a block. Records and photos of how the plantain percentage was derived will need to be retained for audit purposes.</p> <p>*Currently Ecotain™ is the only recognised cultivar proven to reduce N leaching.</p>				
Fodder crop block-specific	<p>Fodder blocks are blocks on which crops are grown specifically as a supplementary feed for livestock. The fodder crop area is an area of the farm's pasture that is cultivated, sown with a fodder crop and then re-sown back to pasture all within the space of 12 months.</p> <p>If over half of the block has been re-grassed within the last 5 years, select <i>Cultivated in the last 5 years</i> when information is entered for the block in the pasture input tab.</p> <p>If re-grassing is occurring as part of a crop rotation this would be modelled using a crop or fodder block depending on the length of the rotation.</p>				
Susceptibility to pugging	<p>Select 'rare' for all soils defined as well-drained in S-Map.</p>				
Animal Distribution	<p><u>Relative productivity</u>: Selecting 'Relative pasture yield' will enable productivity differences between blocks, please ensure this approach is applied to blocks of "grazed trees" and "grazed wetlands".</p> <p><u>% of Pasture Eaten by Each Animal Enterprise on Each Block</u>: Selecting 'Same as ratio of total animal intake' will allocate enterprises evenly across blocks.</p>				
Adding Livestock	<p>If mature weight or weight gain is known enter these as well as age at start. If weights are not known use age at start only. The inclusion of age at start when weights are entered does not override the weights but helps with interpretation of the stock calendar.</p>				

Input	BOPRC protocol
Adding Livestock	If default weights are being overridden in developing an analysis please ensure records of weights are kept.
'Back to back' fodder cropping	For situations of 'back to back' fodder cropping (greater than 12 months rotation) Overseer recommendation is to use a Crop Block. See Appendix 1.

¹ For Overseer analyses that form the basis of consent applications, or year-end monitoring analyses, BOPRC will provide the latitude and longitude for each block once a farm map has been supplied.

² BOPRC uses soil data generated by Landcare Research and provided via S-map dated 2014. At this stage the BOPRC S-map data is not being changed with changes to the national database. This policy will be reviewed in the science review of 2027.

³ A house block that is 1000 m² (or 0.1 ha), the percentage of the block that is cultivated = $100\text{m}^2/1000\text{m}^2 = 10\%$. Where there is more than one house on the property, the areas of each house and garden/section can be summed, and entered into Overseer as a single "house" block.

⁴ BOPRC will provide the block slope data for the farm block map to 2 decimal places. Where one Overseer block comprises several geographically separate part-blocks, slope is calculated based on the average slope of all of the part blocks.

Appendix 1. Fodder crop rotation guidelines:

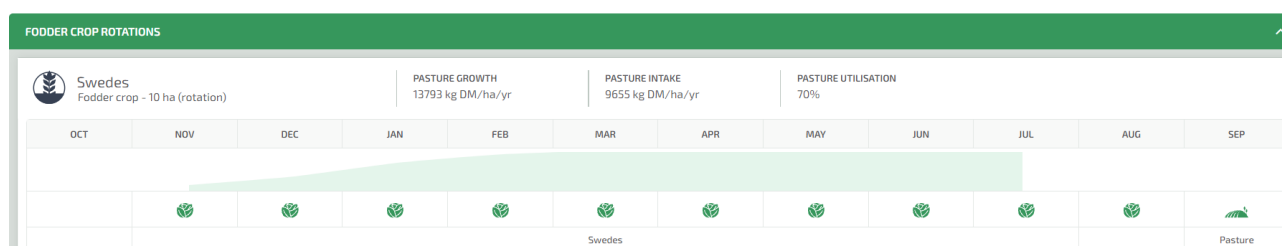
There are several situations where fodder crops are required to be mapped in as a separate GIS area and entered in Overseer as a crop block. These include:

- 1 Where a fodder crop is rotating through a pastoral block that is cut by a catchment boundary and the losses need to be captured on one side or the other of the catchment boundary.
- 2 Where the area of the fodder crop is greater than 25% of the total block area.
- 3 Where a fodder crop rotation is greater than 12 months e.g. double cropping.

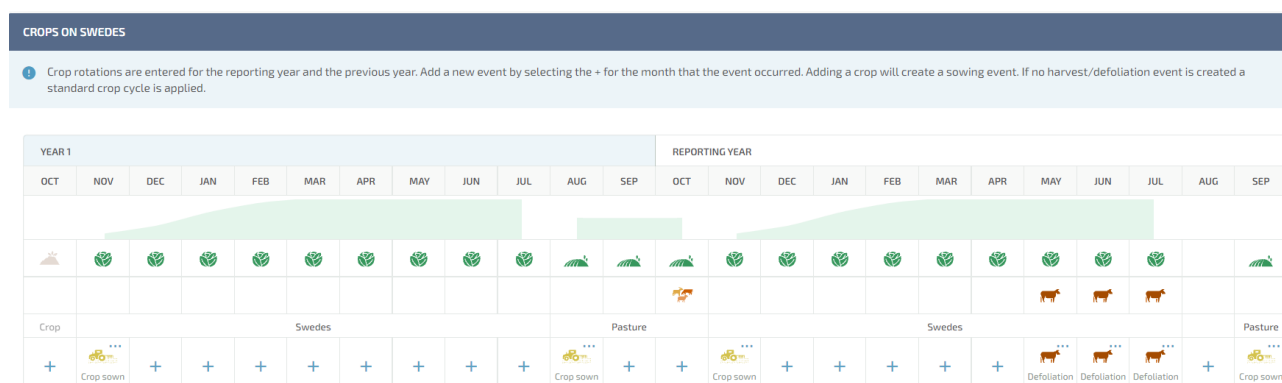
To capture these scenarios the map is required to have the 'Crop' block mapped into GIS with the understanding that although the block on the map is static it is understood that it rotates through the pastoral block.

In situations where at any one time there are two fodder crops on the farm - one swede crop that is planted into pasture and the second fodder crop is planted into ground previously planted into a fodder crop ie as a back to back crop. This can be modelled in Overseer with the first rotation of swedes entered as a 'Fodder crop' and the second rotation of a swede crop entered as a 'Crop' block with swedes entered as the previous crop with the 'End' month being the same for both blocks. See example below:

- 1 First crop in rotation entered as a fodder crop



- 2 Second crop in rotation entered as a crop block

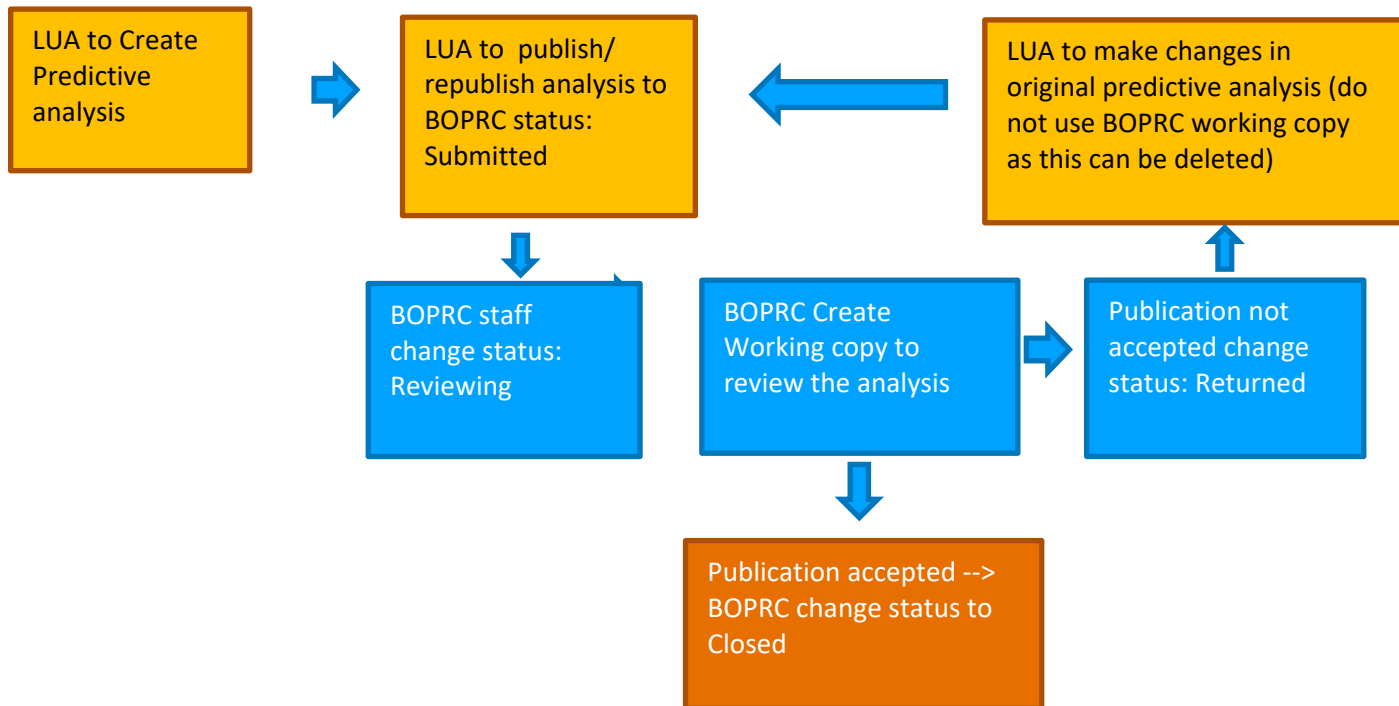


When entering 'Years in Pasture' under block history for a 'Crop' block the years in pasture correlates to the percentage of the block being cropped. As the percentage of area cropped increases the years in pasture decreases.

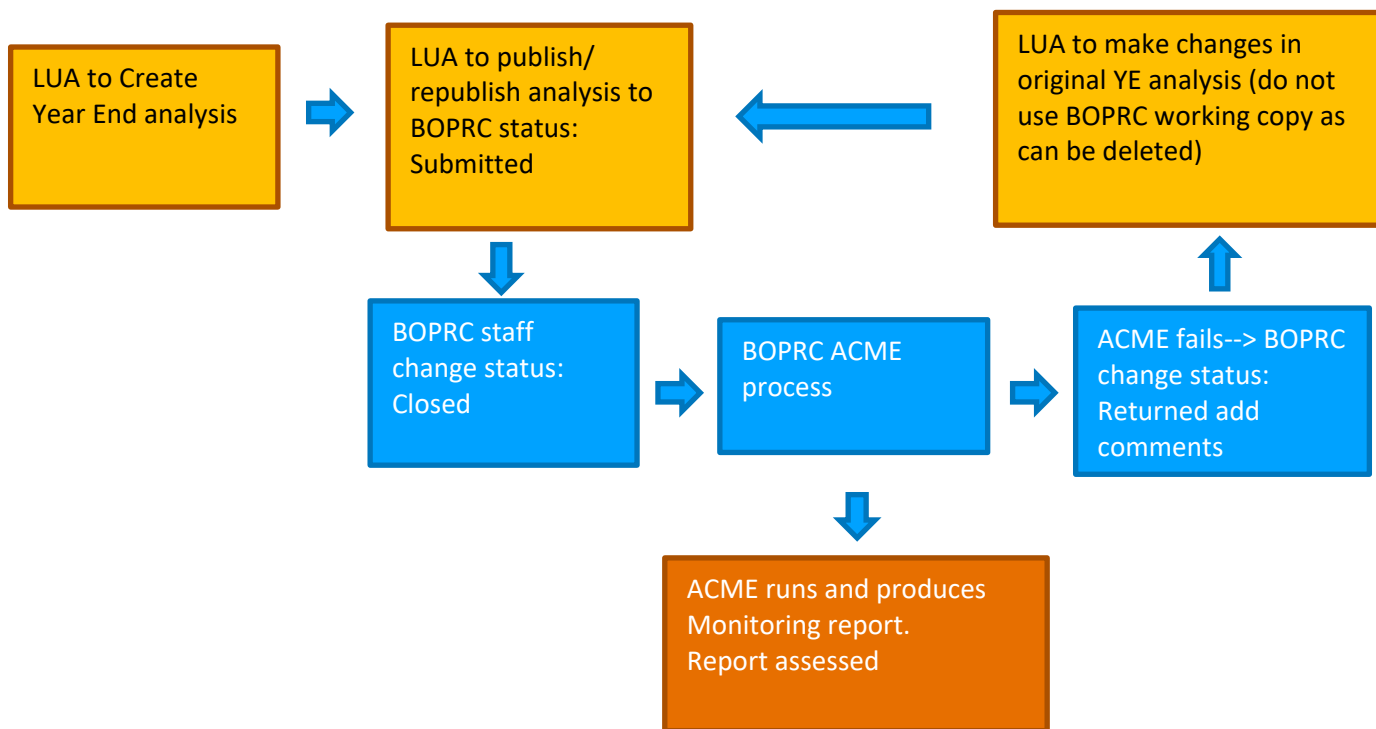
% of block cropped	10	20	30	40	50	60	70	80	90	100
Years in pasture	9	8	7	6	5	4	3	2	1	0

Appendix 2. Submitting an Overseer Analysis:

Creating a Predictive analysis



Creating a Year End analysis



To edit an Overseer analysis

Select 'copy' option under the analysis and save as predictive or YE analysis. Do not use BOPRC working copy as this is deleted and a new BOPRC working copy created to view any changes made in the adjusted analysis.

The screenshot displays the 'YEAR END ANALYSES' interface. It features three main sections: 'Year ending 2016 2016', 'WORKING COPY - BAY OF PLENTY REGIONAL COUNCIL', and 'PUBLICATIONS (1)'. Each section shows analysis details such as 'N' (21 kg/ha), 'P' (1 kg/ha), and 'GHG' (4,074 kg/ha) values, along with version numbers (v6.4.2). The interface includes various action buttons like 'COPY', 'REPLACE', 'SIMPLIFY', and 'COMPARE'. The 'PUBLICATIONS (1)' section lists a published analysis for 'Bay of Plenty Regional Council' on 19 Jun 2020, published by Stephanie Fraser, with farm identifier 05 05 004 00 and reference RM18-024b.