

North Wyke Farm Platform

Technical case study no. 2

Field Spreading Area Calculations

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The Farm Platform database holds information on a range of different field areas, like fenced area, FYM spreading area, inorganic fertilizer spreading area, cutting area, and total hydrological catchment area. The different areas often depend on distance from a feature (e.g. fence or a water course), where these distances are dictated by regulation.

On the Farm Platform the position of the fence line, hedges and water-courses have been determined using GPS RTK (Real time Kinematic) that provides positions with an accuracy within 10 cm. In a GIS, we can create the spreading area polygons by excluding buffer zones around these features, and then snapping to these features.

The Farm Platform is located in a Nitrate Vulnerable Zone, so restrictions apply on the spreading of FYM and inorganic fertilizer, which are as follows:

2m from the centre of a hedge:

- **For both organic (FYM) and inorganic fertiliser**
N.B. As the coordinates of the centre of the hedge (which appear to be at least 2m wide) have not been recorded, a buffer of 1m from the fence-line has been used.

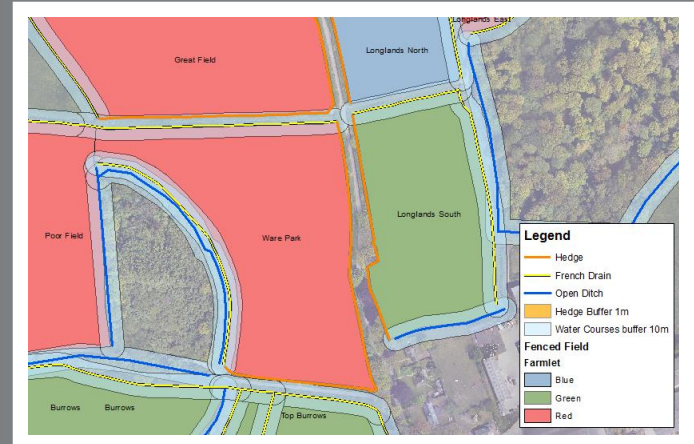
2m from the edge of a watercourse:

- **Inorganic Fertiliser**
Applied for French Drains and Open Ditches

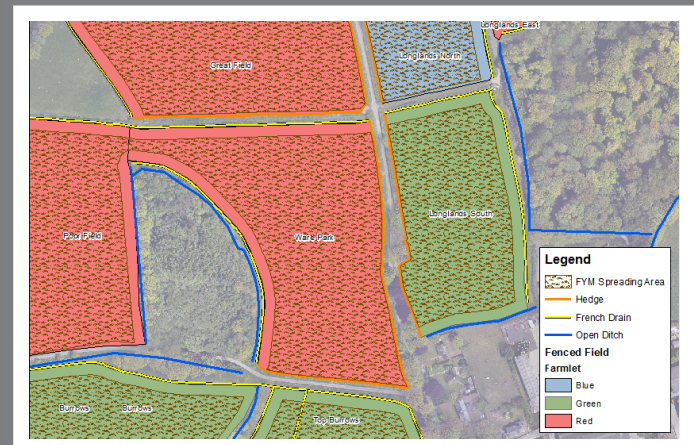
10m from the edge of a watercourse:

- **Organic Fertiliser**
Applied for French Drains and Open Ditches

The area of each resulting polygon is determined and then assigned to the relevant field and inserted in the Farm Platform database.



An example of the buffers used to generate the FYM spreading polygons.



Above, the created FYM spreading area polygons.

Below, the structure of the attributes stored in the Fenced Fields table, including the new areas for FYM and inorganic fertilizer spreading.

Fenced Field

OBJECTID	Shape *	Field_Name	Flume_ID	Farmlet	Area_ha	Farm_Platform	Old_FP	New_FP	FYM Spreading Area	Inorganic Spreading Area	Field_code	DB_Catchment
1	Polygon	Higher Wyke Moor	8	Blue	4.32	1	1	1	38014.124753	42681.304782	NW010	8
2	Polygon	Middle Wyke Moor	8	Blue	2.700376	1	1	1	22883.363846	26523.701652	NW011	8
3	Polygon	Lower Wyke Moor	7	Blue	2.599911	1	1	1	20672.044073	25437.424666	NW012	7
4	Polygon	Golden Rove	6	Green	3.857106	1	1	1	32769.127131	37790.638873	NW009	6
5	Polygon	Orchard Dean	5	Green	6.542819	1	1	1	55755.303718	63909.684623	NW008	5
6	Polygon	Dairy South	9	Blue	6.441914	1	1	1	59577.575496	63856.21218	NW013	9
7	Polygon	Lower Wheaty	10	Red	1.819863	1	1	1	13856.724337	17770.571718	NW015	10
8	Polygon	Pecketsford	1	Red	3.501638	1	1	1	29724.850213	34388.627415	NW001	1
9	Polygon	Great Field	2	Red	6.653351	1	1	1	60555.609931	65501.765622	NW002	2
10	Polygon	Longlands East	15	Red	1.537153	1	1	1	12053.472648	15037.782972	NW019	15
11	Polygon	Longlands North	14	Blue	1.715821	1	1	1	14386.70949	16720.514552	NW018	14
12	Polygon	Longlands South	13	Green	1.748588	1	1	1	14217.930278	16945.332396	NW017	13
13	Polygon	Dairy North	12	Green	1.778943	1	1	1	13945.48536	17372.405131	NW016	12
14	Polygon	Poor Field	3	Red	3.919726	1	1	1	33452.984897	38676.689981	NW003	3