

Future CAP Payments

Estimating the Area Potentially Eligible for Single Farm Payment

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EXECUTIVE SUMMARY

The analysis presented in this paper was commissioned by the CAP Reform and Crop Policy Branch of Scottish Government in support of deliberations on post 2013 CAP payments and in particular the move from historic to area based payments for the Single Farm Payment (SFP). There was interest in assessing potential changes to the overall eligible area for which SFP could potentially be paid and in testing the effects of alternative eligibility criteria (using land use and stocking rate criteria, as suggested by the Final Report of the Pack Inquiry). Stocking rates per holding were defined in standardised livestock units (LSU) per unit area of forage land, using data from previous researchⁱ

The key findings from the research are detailed in the table below. The table presents the eligible area for existing and new recipients and the total eligible area for four scenarios (A to D) with varying stocking rate based eligibility criteria. With no stocking rate restrictions applied (A) the existing area is maintained and 1.04M ha added. Assuming a pro rata change in payments this would reduce SFP payments for existing recipients by approximately 22%. Any stocking rate eligibility criterion (scenarios B-D) substantially reduces the eligible area for new recipients (from 1.04M ha to 0.19M ha for scenario B) indicating that much of this land is not presently stocked with domestic animals. Stocking rate restrictions would also affect the existing recipients with significant reductions in eligible area occurring as the threshold for eligibility increases. Setting a threshold value which indicates appropriate levels of activity is context dependent, with factors such as climate, soil fertility, species composition of forage land and socio-economic factors all relevant. Differentiating between zero and very low stocking rates would, in practice, be difficult to police and potentially easy to circumvent.

Summary of Existing Recipients and New Recipients for each of the Eligibility Scenarios

| <i>Eligible Area Scenario</i> | | <i>Eligible Area for Existing Recipients</i> | <i>Eligible Area for New Recipients</i> | <i>Total Area</i> |
|-------------------------------|--------------------------------------|--|---|-------------------|
| A | No stocking rate threshold applied | 4,736,346 | 1,041,053 | 5,777,399 |
| B | Minimum stocking rate of 0.01 LSU/ha | 4,024,481 | 192,576 | 4,217,057 |
| C | Minimum stocking rate of 0.06 LSU/ha | 3,591,759 | 143,842 | 3,735,601 |
| D | Minimum stocking rate of 0.12 LSU/ha | 3,248,094 | 120,472 | 3,368,566 |

In terms of farm type 65% of newly eligible land in scenario A would fall within 'Other', and within this type nearly all the new recipients are Specialist Grass and Forage holdings. Since nearly all of this area is eliminated by a stocking rate eligibility criterion of 0.12 lsu/ha some care is needed to be sure that the methodology for attributing livestock to holdings is not unfairly penalising these holdings. Other farm types where there is significant increase in eligible area in scenario A are LFA Sheep and Cattle (mainly in Specialist Sheep) and Common Grazings.

Geographically, the distribution of new eligible land reflects farm type analysis with Highlands and Islands, where LFA sheep and cattle and specialist sheep farms dominate, seeing the greatest increase when stocking rates are not imposed but seeing the greatest proportional reduction when higher values for stocking rates are used to determine eligibility. The substantial reduction in eligibility for existing recipients in the Highland and Island (2.2M ha to 1.2M ha) indicates that the use of a stocking rate of 0.12 lsu/ha as a measure of appropriate minimum activity is probably too restrictive.

Since no minimum size criterion was imposed there are substantial numbers of small holdings represented within the potential new recipients. In scenario A there are 11,675 of 29,608 new holdings (39%) where the eligible used area is less than 3 ha, but these make up only 16,394 ha of area (1.2%). The potential administrative burden for such a small area means that consideration needs to be given to either continuing to

ⁱhttp://www.macaulay.ac.uk/LADSS/research_policy.html

exclude such holdings or using the simplified provisions of a small-farmer scheme. Conversely there are small numbers of very large holdings, with 185 holdings or 0.6% of the new recipients making up 783,851 ha or 57% of the potential new area. Stocking rate restrictions substantially reduce the areas associated with these larger holdings indicating that although they have land that could potentially be used for agricultural purposes, they are in reality managed for other enterprises such as red deer or game birds and would be less likely to apply for SFP.

1. INTRODUCTION

This document is intended to contribute to the development of Scotland's position during the post-2013 CAP reform process by quantifying the potentially eligible areas for existing and new recipients through an analysis of June Agricultural Census (JAC), Single Farm Payment (SFP) data and other sources. The quantification is in terms of area and numbers of holdings with classifications by farm-type, region and size.

2. METHODS AND ASSUMPTIONS

2.1. Datasets and Calculations

The potentially eligible areas for existing and new recipients of SFP are derived from June Agricultural Census (JAC), the Shareholder Tenant (SHT) dataset in Integrated Administration and Control System (IACS) and Single Application Form (SAF) data also from IACS. These data sources were supplemented by the mapping of common grazings from Crofters Commission and common grazings identified in the MP2 Address List. The analysis is conducted at holding-level, since this maximises the area for which land-use based eligibility can be determinedⁱⁱ. JAC classifications are used to describe the combined JAC and IACS data in terms of farm-type (robust and main) and region (NUTS2 and NUTS3). Where farms do not appear in JAC their farm type cannot be determined without further analysis.

Five datasets are used to identify and segment the agricultural area of Scotland, with the segment, the source and the completeness of the land use classification listed in Table 1.

Table 1: Data sources used to define the segments of the agricultural area of Scotland

| <i>Segment</i> | <i>Source</i> | <i>Classified</i> |
|--|--------------------------------------|-------------------|
| Crop and Forage Area | June Agricultural Census | All |
| Crop and Forage Area not in JACⁱⁱⁱ | IACS SAF Ordinary Sheet | No |
| Common Grazing Area | IACS Shareholder Tenant | Partially |
| Common Grazing Area not in SHT^{iv} | Crofters Commission/MP2 Address List | Partially |
| Seasonally Rented Area | IACS SAF Seasonal Sheet | Partially |

All land has been differentiated in terms of existing and potentially eligible area by referencing the 2009 SAF entitlement dataset.

Stocking rates are determined per holding as the standardised livestock units per unit of forage area (LSU/ha). The livestock numbers from JAC or December Survey (DS) are converted to livestock units using standard weightings as used in previous analyses¹. Note that in determining stocking rates the forage area used must be the used area (i.e. owned and used area minus rentals out and plus and rentals in). Rentals are defined using data from the SAF seasonal rental forms and the methodology accounts for the considerable number of situations where there are multiple users of land parcels with varying shares.

ⁱⁱ Eligibility is defined as per the Pack Inquiry report - <http://www.scotland.gov.uk/Publications/2010/11/01153620/0>

ⁱⁱⁱ These are holdings making a SAF claim (for SFP or other schemes, e.g. SRDP) that do not appear in JAC. Not all have current SFP eligibility, hence new recipients are possible.

^{iv} These are common grazing areas that do not appear in the IACS Shareholder Tenant dataset but do exist either in the Crofters Commission map of common grazing or in the MP2 Address List.

Where a holding's stocking rate does not meet the criterion, the eligible forage area is reduced until the criterion is met, unless the land is not stocked when no area is eligible. This reduction based strategy is consistent with the proposals of the Pack Inquiry Final Report.

2.2. Assumptions in the Analysis

Within the analysis a number of assumptions have had to be made. These assumptions are listed below so that the basis for the results is transparent and the remaining sources of uncertainty within the results can be appreciated. Limited commentary is provided where necessary to clarify the effect of the assumptions.

The analysis makes the following assumptions:

- JAC data is for June 2009.
- DS data is for December 2009.
- IACS data (SAF field claims, seasonal rentals and commons) is for May 2009.
- Crofters commission data is for March 2011.
- MP2 Address List data is for June 2009.
- SFP entitlement data is for 2009.
- Holdings affiliated to businesses that are identified in IACS as in receipt of SFP in 2009 are classified as existing recipients. All other holdings, including those in receipt of SFP in a previous year but not in 2009, are classified as potential new recipients.
- To enforce data integrity rules the IACS field data claims, and in particular the seasonal rental claims, are adjusted using an improved version of the multi-step process described in previous work^v.
- The area for each holding is calculated as owned area plus share of commons area plus rented-in area minus rented out area. Note: in some cases the rented-in area does not match the rented-out area therefore some uncertainty is introduced.
- Common grazings with no known shareholders are treated as individual holdings.
- 7000-coded holdings (the so called "landless" holdings) and 900-coded holdings (i.e. holdings based elsewhere in the UK but with ownership of Scottish agricultural land) have been included in this analysis where data exists.
- Assumptions have been made in the classification of IACS land uses as cropping; forage and excluded. These are broadly in line with the assumptions made during the Pack Inquiry.
- Both JAC and DS data are used in the calculation of livestock units per holding with the higher value for each holding preferred in order to reduce the effect of fluctuations in stock numbers through the year
- Assumptions have been made on the classification and weightings in the calculation of stocking rates. These are broadly in line with the assumptions made during the Pack Inquiry and comprise a simple weighting system for cattle, sheep and farmed deer.
- Livestock may not be captured by JAC or DS if they are always kept on seasonal lets and the keeper/owner has no other permanent land (rented or owned). Since this analysis depends on JAC and/or DS data for the calculation of livestock units and the implementation of minimum stocking rate thresholds it is possible that in these cases too much land would be excluded and the overall eligible area would be underestimated. The magnitude of the issue remains to be defined.

^v<http://www.scotland.gov.uk/Publications/2010/11/01153620/0>

- This analysis assumes that farmer behaviour will not change based on changes to the payment regime, however the data suggests that there is the potential for change in the area rented seasonally if that area became eligible for payment (at present holdings without entitlement rent out a substantial area of land to those with entitlement). Furthermore, the introduction of minimum stocking rates might affect stocking behaviour or encourage businesses to reconfigure their sub-holding structures to better match the payment rules. Therefore, careful interpretation of these results taking these and other issues into account is essential.

3. RESULTS

3.1. Calculating the Agricultural Area

The total agricultural area of Scotland is 6.3 million hectares out of a total area of 7.8 million hectares (81%). Table 2 shows a breakdown of how the total agricultural area was calculated based on the available input data.

Table 2: Total Agricultural Area of Scotland

| | <i>Area (ha)</i> |
|---|------------------|
| JAC Area (all land uses) | 5,584,918 |
| IACS Area not in JAC (included land uses) | 36,226 |
| IACS Area not in JAC (excluded land uses) | 129,018 |
| Common Grazing Area | 537,498 |
| Apportionments & Commons Crop Areas | 14,400 |
| Agricultural Area of Scotland | 6,302,060 |

3.1.1. Calculating the Forage Area

Table 3 shows how the forage area is calculated and the adjustments to account for rentals. The adjustment for rentals is needed because eligibility is based on the area *used* by a holding rather than the area *owned*.

Table 3: Calculating the Forage Area of Scotland

| | <i>Area (ha)</i> |
|--|------------------|
| JAC Grass Area | 1,360,828 |
| JAC Rough Grazing Area | 3,217,955 |
| Common Grazing Area | 537,498 |
| Apportionments | 13,327 |
| IACS Forage not in JAC | 33,561 |
| Total Forage Area | 5,163,171 |
| IACS Forage Rent in Area | 673,813 |
| IACS Forage Rent out Area ^{vi} | 652,712 |
| Rental Adjusted Total Forage Area | 5,184,272 |

^{vi} This figure should match the IACS Forage Rent in Area since no new area is added or removed – rented areas are simply redistributed between holdings. However, missing rental data amounting to 1,565 ha and IACS data that indicates renting out of more land than a holding owns as defined in JAC (approx. 22,666 ha) mean that the expected match in areas is not achieved. Since JAC is the primary dataset in this analysis the JAC ownership areas are used and the rental out area thus has to be reduced to ensure no negative areas are generated. The net effect of this is a potential over estimation of forage area of 22,666 ha. Further analysis with both JAC and IACS datasets is likely to reduce this uncertainty.

3.1.2. Calculating the Cropped Area

Table 4 shows how the crop area was calculated and the adjustments for rentals. Note again the issues of reconciling the rental areas.

Table 4: Calculating the Crop Area of Scotland

| | <i>Area (ha)</i> |
|--|------------------|
| JAC Crop Area | 586,176 |
| IACS Crop Area not in JAC | 2,665 |
| Commons Crop Area | 1,073 |
| Total Crop Area | 589,914 |
| IACS Crop Rent in Area | 35,101 |
| IACS Crop Rent out Area ^{vii} | 31,866 |
| Rental Adjusted Total Crop Area | 593,129 |

3.2. Summary of Eligible Area

Total eligible area is given as the sum of the rental adjusted total crop area and rental adjusted total forage area where the forage area meets a stocking rate criterion.

3.2.1. Eligible Area Scenarios - Stocking Rate

In order to illustrate the impact of a stocking rate threshold on the total eligible area four scenarios have been developed. Table 5 shows the total area that is eligible for payment for each of these scenarios.

Table 5: Calculating the Total Area Eligible for Payment

| # | <i>Eligible Area Scenario</i> | <i>Area (ha)</i> |
|----------|--------------------------------------|------------------|
| A | No stocking rate threshold applied | 5,777,399 |
| B | Minimum stocking rate of 0.01 LSU/ha | 4,217,057 |
| C | Minimum stocking rate of 0.06 LSU/ha | 3,735,601 |
| D | Minimum stocking rate of 0.12 LSU/ha | 3,368,566 |
| - | "Zero" SR Temporary Grassland | 49,834 |
| - | "Zero" SR Permanent Grassland | 93,013 |

Note that in interpreting the eligible area it is necessary to consider areas of improved grassland (permanent and temporary) that have zero stocking rates. These areas of land often occur as part of businesses in lowland areas where no livestock are reported either in June or December. These areas of land in some case represent small areas of headlands but in other represent an integral part of crop rotations (in the case of temporary grasslands) or are used seasonally for livestock. As improved land meeting GEAC these areas could reasonably be included within the eligible area. Consideration also needs to be given to the organisational scale at which minimum stocking rates are applied. The analysis reported here applies the threshold at *holding* level. When applying a minimum stocking rate at holding level rather than business level a larger area is excluded.

^{vii} As with Forage area this figure should match the Total Crop Area since no new area is added or removed - areas are simply redistributed between holdings. However, missing rental data amounting to 52 ha and data that indicates renting out of more land than a holding owns (approx. 3,162 ha) mean that the expected area is not achieved.

3.2.2. Eligible Area by Farm Type

Table 6 shows the eligible area by farm type (robust and main) for each of the stocking rate scenarios.

Table 6: Eligible Area by Farm Type for each Stocking Rate Scenario

| <i>Farm Type</i> | <i>Eligible Area No SR</i> | <i>Eligible Area SR 0.01</i> | <i>Eligible Area SR 0.06</i> | <i>Eligible Area SR 0.12</i> |
|-------------------------------|--------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Cattle and sheep (LFA) | 3,199,178 | 3,073,700 | 2,620,600 | 2,271,890 |
| Cattle and sheep (DA) | 34,816 | 34,685 | 34,372 | 33,962 |
| Mixed Cattle and Sheep (SDA) | 965,999 | 957,270 | 870,611 | 766,037 |
| Specialist Beef (SDA) | 910,898 | 861,463 | 776,665 | 731,997 |
| Specialist Sheep (SDA) | 1,287,464 | 1,220,282 | 938,953 | 739,894 |
| Cattle and sheep (Lowland) | 69,259 | 67,930 | 64,709 | 63,385 |
| Cattle and sheep (Lowland) | 69,259 | 67,930 | 64,709 | 63,385 |
| Cereals | 358,794 | 282,315 | 277,220 | 274,494 |
| Cereals | 358,794 | 282,315 | 277,220 | 274,494 |
| Dairy | 186,600 | 186,600 | 186,484 | 184,373 |
| Dairy (LFA) | 141,381 | 141,381 | 141,266 | 139,155 |
| Dairy (Lowland) | 45,218 | 45,218 | 45,218 | 45,218 |
| General Cropping | 318,714 | 269,521 | 265,832 | 260,362 |
| General Cropping | 318,714 | 269,521 | 265,832 | 260,362 |
| Horticulture | 15,185 | 8,030 | 6,528 | 5,781 |
| Other Horticulture | 8,290 | 3,250 | 2,855 | 2,576 |
| Specialist Fruit | 1,145 | 513 | 447 | 423 |
| Specialist Glass | 5,750 | 4,267 | 3,226 | 2,782 |
| Mixed | 333,008 | 301,045 | 288,572 | 284,526 |
| Cropping and Dairy | 11,910 | 11,910 | 11,910 | 11,868 |
| Cropping and Mixed Livestock | 4,626 | 4,401 | 3,788 | 3,332 |
| Cropping, Cattle and Sheep | 290,997 | 260,787 | 250,546 | 247,588 |
| Cropping, Pigs and Poultry | 9,152 | 8,364 | 8,354 | 8,348 |
| Mixed Livestock | 16,323 | 15,583 | 13,974 | 13,390 |
| Other | 1,076,901 | 14,090 | 13,035 | 12,573 |
| Non-classifiable - Fallow | 6,132 | 3,606 | 3,606 | 3,606 |
| Non-classifiable - Other | 4,011 | 549 | 549 | 549 |
| Special Set-aside | 3,513 | 694 | 633 | 612 |
| Specialist Grass and Forage | 1,057,253 | 9,076 | 8,098 | 7,676 |
| Specialist Horses | 5,992 | 165 | 149 | 131 |
| Specialist Pigs | 5,880 | 2,181 | 1,860 | 1,806 |
| Specialist Pigs | 5,880 | 2,181 | 1,860 | 1,806 |
| Specialist Poultry | 20,151 | 7,262 | 6,377 | 4,994 |
| Specialist Poultry | 20,151 | 7,262 | 6,377 | 4,994 |
| Solely Common Grazing | 64,798 | 208 | 208 | 208 |
| Missing Farm Type | 128,932 | 4,176 | 4,176 | 4,176 |
| Grand Total | 5,777,399 | 4,217,057 | 3,735,601 | 3,368,566 |

3.2.3. Eligible Area by Region

Table 7 shows the eligible area by region (NUTS2 and NUTS3) for each of the stocking rate scenarios.

Table 7: Eligible Area by Region for each Stocking Rate Scenario

| <i>Region</i> | <i>Eligible Area No SR</i> | <i>Eligible Area SR 0.01</i> | <i>Eligible Area SR 0.06</i> | <i>Eligible Area SR 0.12</i> |
|---|--------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Eastern Scotland | 1,389,326 | 1,165,602 | 1,113,998 | 1,045,301 |
| Angus and Dundee City | 190,774 | 155,005 | 151,663 | 139,926 |
| Clackmannanshire and Fife | 110,814 | 97,273 | 96,316 | 95,554 |
| East Lothian and Midlothian | 89,614 | 80,136 | 79,786 | 76,622 |
| Edinburgh, City of | 14,600 | 11,706 | 11,683 | 11,647 |
| Falkirk | 18,257 | 15,329 | 14,990 | 14,863 |
| Perth & Kinross and Stirling | 563,579 | 443,552 | 400,640 | 354,798 |
| Scottish Borders | 379,205 | 343,110 | 339,735 | 332,846 |
| West Lothian | 22,482 | 19,491 | 19,184 | 19,046 |
| Highlands and Islands | 2,994,687 | 1,877,632 | 1,474,403 | 1,209,230 |
| Caithness & Sutherland and Ross & Cromarty | 1,050,932 | 541,125 | 368,766 | 278,553 |
| Eilean Siar (Western Isles) | 277,282 | 151,823 | 122,163 | 92,730 |
| Inverness & Nairn and Moray, Bad.& Strath. | 521,648 | 350,005 | 281,323 | 231,241 |
| Lochaber, Skye & Lochalsh, Arran & Cumb. etc. | 911,389 | 636,561 | 509,144 | 425,790 |
| Orkney Islands | 92,858 | 78,139 | 77,031 | 75,330 |
| Shetland Islands | 140,578 | 119,979 | 115,976 | 105,587 |
| North Eastern Scotland | 504,924 | 399,766 | 377,872 | 359,344 |
| Aberdeen City and Aberdeenshire | 504,924 | 399,766 | 377,872 | 359,344 |
| South Western Scotland | 880,500 | 774,009 | 769,281 | 754,643 |
| Dumfries & Galloway | 448,704 | 400,619 | 399,381 | 394,466 |
| East Ayrshire and North Ayrshire mainland | 120,560 | 104,103 | 102,149 | 98,689 |
| E&W Dunbartonshire & Helensburgh & Lom. | 41,429 | 36,113 | 35,610 | 34,689 |
| Glasgow City | 719 | 414 | 414 | 414 |
| Inverclyde, East Renfrewshire & Renfrewshire | 36,631 | 30,130 | 30,117 | 29,664 |
| North Lanarkshire | 22,714 | 17,195 | 17,079 | 16,859 |
| South Ayrshire | 83,382 | 71,965 | 71,779 | 71,254 |
| South Lanarkshire | 126,360 | 113,470 | 112,751 | 108,608 |
| Cross-border Holdings ^{viii} | 6,406 | 48 | 48 | 48 |
| Missing Region | 1,558 | 0 | 0 | 0 |
| Grand Total | 5,777,399 | 4,217,057 | 3,735,601 | 3,368,566 |

^{viii} Scottish land where the main location is elsewhere in the UK.

3.2.4. Maps of Eligible Area by Parish

The following maps show the eligible area as a proportion of the total agricultural area by parish for each of the stocking rate scenarios: 0.01 LSU/ha (Figure 1); 0.06 LSU/ha (Figure 2); and 0.12 LSU/ha (Figure 3).

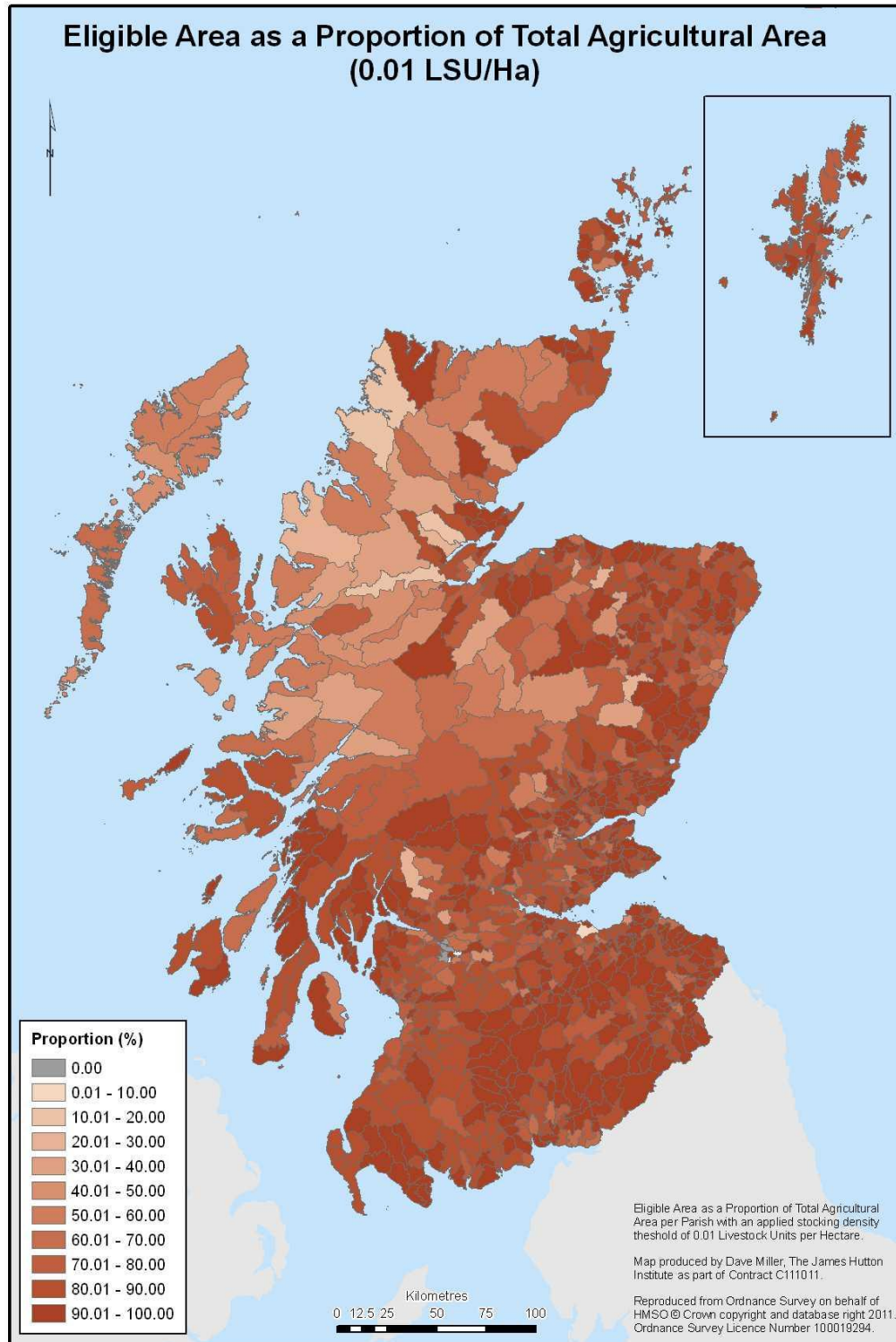


Figure 1: Eligible Area as a proportion of Total Agricultural Area per Parish at a stocking density threshold of 0.01 LSU/Ha

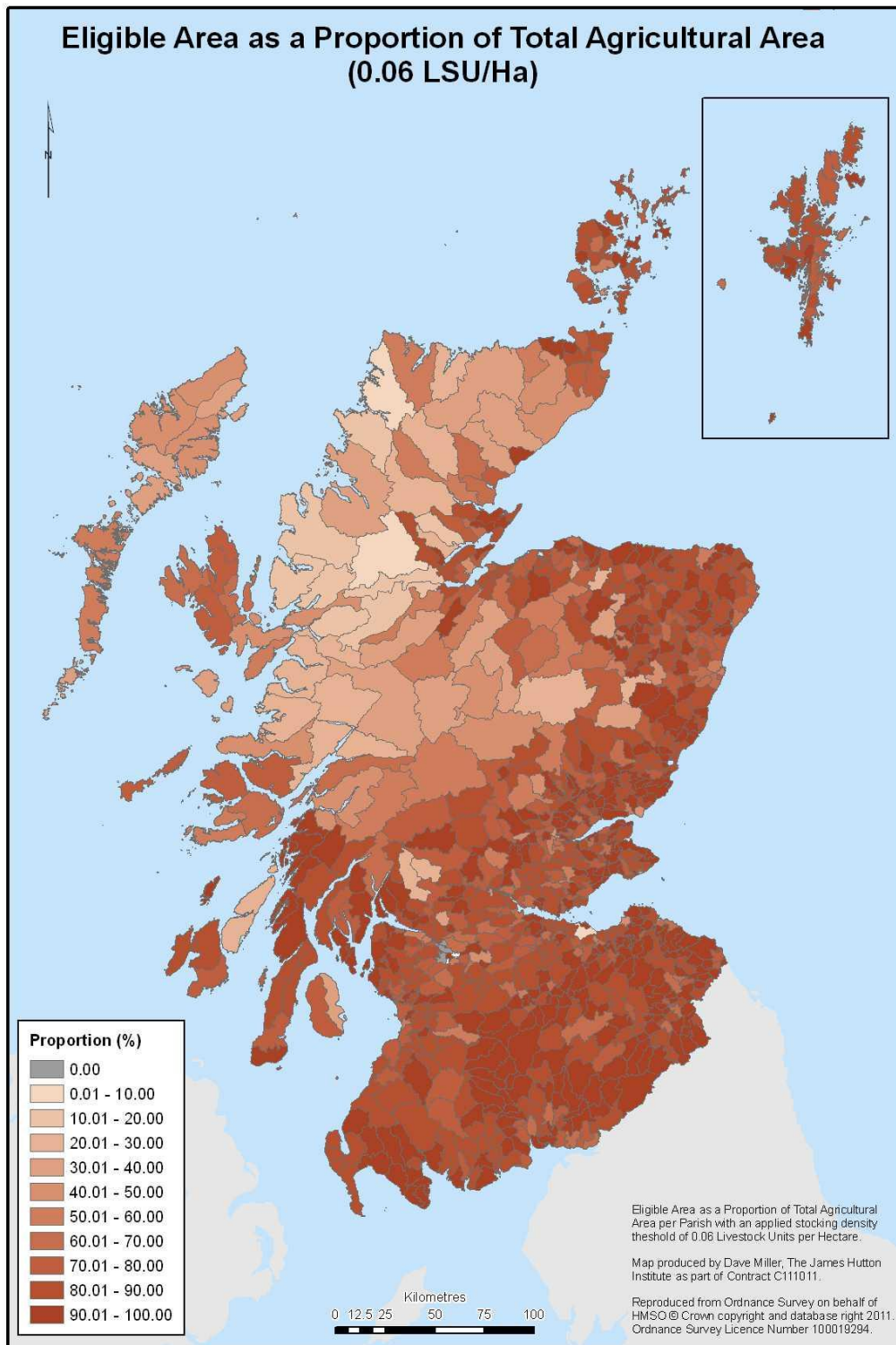


Figure 2: Eligible Area as a proportion of Total Agricultural Area per Parish at a stocking density threshold of 0.06 LSU/Ha

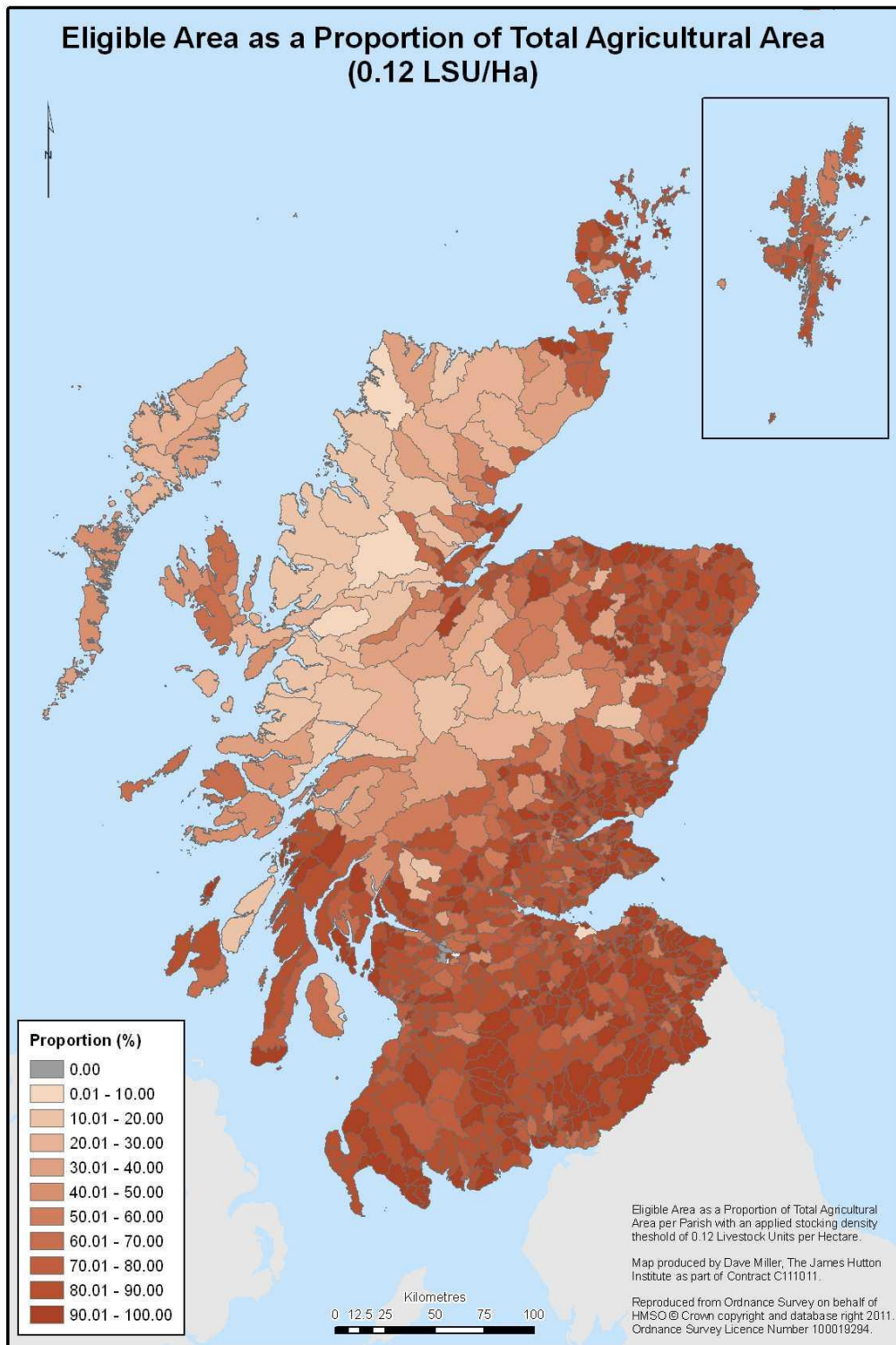


Figure 3: Eligible Area as a proportion of Total Agricultural Area per Parish at a stocking density threshold of 0.12 LSU/Ha

3.3. Summary of Existing and New Recipients

Table 8 shows a potentially eligible area of 5.8 million hectares which includes 4.7 million hectares of existing recipients and 1 million hectares of new recipients. When minimum stocking rate thresholds are applied to the forage area the eligible area is reduced to: 4.2 million hectares at 0.01 LSU/ha; 3.7 million hectares at 0.06 LSU/ha; and 3.4 million hectares at 0.12 LSU/ha.

Table 8: Summary of Existing Recipients and New Recipients for each of the Eligibility Scenarios

| # | Eligible Area Scenario | Eligible Area for Existing Recipients | Eligible Area for New Recipients | Total Area |
|----------|--------------------------------------|---------------------------------------|----------------------------------|------------|
| A | No stocking rate threshold applied | 4,736,346 | 1,041,053 | 5,777,399 |
| B | Minimum stocking rate of 0.01 LSU/ha | 4,024,481 | 192,576 | 4,217,057 |
| C | Minimum stocking rate of 0.06 LSU/ha | 3,591,759 | 143,842 | 3,735,601 |
| D | Minimum stocking rate of 0.12 LSU/ha | 3,248,094 | 120,472 | 3,368,566 |

3.3.1. Existing and New Recipients by Farm Type

Table 9 shows potential area eligibility for existing recipients and new recipients classified by robust and main farm type. The second and third columns are for scenario A (no minimum stocking rate) and the fourth and fifth columns are for scenario D (minimum stocking rate of 0.12 LSU/ha). It is worth noting the large area of Specialist Grass and Forage (391,030 ha for existing recipients; 666,223 ha for new recipients) since the stocking rate criteria excludes almost all of this area. Further analysis of this farm type might be useful to ensure that the exclusion is legitimate, particularly if this area could contain transient livestock that are grazed there seasonally but may not be captured by JAC.

Table 9: Existing Recipients and New Recipients by Farm Type (scenarios A and D)

| <i>Farm Type</i> | <i>Eligible Area for Existing Recipients (no SR)</i> | <i>Eligible Area for New Recipients (no SR)</i> | <i>Eligible Area for Existing Recipients (SR 0.12 LSU/ha)</i> | <i>Eligible Area for New Recipients (SR 0.12 LSU/ha)</i> |
|-------------------------------------|--|---|---|--|
| Cattle and sheep (LFA) | 3,033,636 | 165,541 | 2,195,803 | 76,087 |
| Cattle and sheep (DA) | 32,644 | 2,172 | 32,119 | 1,843 |
| Mixed Cattle and Sheep (SDA) | 947,232 | 18,767 | 750,748 | 15,289 |
| Specialist Beef (SDA) | 863,380 | 47,518 | 714,520 | 17,478 |
| Specialist Sheep (SDA) | 1,190,380 | 97,083 | 698,416 | 41,477 |
| Cattle and sheep (Lowland) | 60,514 | 8,745 | 58,130 | 5,255 |
| Cattle and sheep (Lowland) | 60,514 | 8,745 | 58,130 | 5,255 |
| Cereals | 342,625 | 16,170 | 263,956 | 10,538 |
| Cereals | 342,625 | 16,170 | 263,956 | 10,538 |
| Dairy | 182,138 | 4,462 | 179,911 | 4,462 |
| Dairy (LFA) | 138,166 | 3,215 | 135,939 | 3,215 |
| Dairy (Lowland) | 43,972 | 1,246 | 43,972 | 1,246 |
| General Cropping | 300,652 | 18,062 | 253,619 | 6,743 |
| General Cropping | 300,652 | 18,062 | 253,619 | 6,743 |
| Horticulture | 7,522 | 7,663 | 4,339 | 1,442 |
| Other Horticulture | 2,877 | 5,413 | 1,769 | 806 |
| Specialist Fruit | 388 | 756 | 306 | 117 |
| Specialist Glass | 4,256 | 1,493 | 2,264 | 518 |
| Mixed | 289,496 | 43,512 | 277,400 | 7,126 |
| Cropping and Dairy | 11,908 | 1 | 11,866 | 1 |
| Cropping and Mixed Livestock | 4,051 | 575 | 3,055 | 277 |
| Cropping, Cattle and Sheep | 250,731 | 40,266 | 242,088 | 5,500 |
| Cropping, Pigs and Poultry | 8,750 | 402 | 8,180 | 169 |
| Mixed Livestock | 14,055 | 2,268 | 12,211 | 1,179 |
| Other | 397,116 | 679,785 | 5,205 | 7,368 |
| Non-classifiable - Fallow | 298 | 5,834 | 181 | 3,425 |
| Non-classifiable - Other | 2,000 | 2,011 | 59 | 490 |
| Special Set-aside | 3,162 | 351 | 582 | 30 |
| Specialist Grass and Forage | 391,030 | 666,223 | 4,333 | 3,343 |
| Specialist Horses | 627 | 5,365 | 51 | 79 |
| Specialist Pigs | 2,463 | 3,417 | 1,492 | 314 |
| Specialist Pigs | 2,463 | 3,417 | 1,492 | 314 |
| Specialist Poultry | 10,245 | 9,905 | 4,419 | 575 |
| Specialist Poultry | 10,245 | 9,905 | 4,419 | 575 |
| Solely Common Grazing | 6,493 | 58,305 | 52 | 156 |
| Missing Farm Type | 103,446 | 25,486 | 3,769 | 407 |
| Grand Total | 4,736,346 | 1,041,053 | 3,248,094 | 120,472 |

3.3.2. Existing and New Recipients by Region

Table 10 shows potential area eligibility for existing recipients and new recipients classified by NUTS2 and NUTS3 regions. The second and third columns are for scenario A (no minimum stocking rate) and the fourth and fifth columns are for scenario D (minimum stocking rate of 0.12 LSU/ha).

Table 10: Existing Recipients and New Recipients by Region (scenarios A and D)

| <i>Region</i> | <i>Eligible Area for Existing Recipients (no SR)</i> | <i>Eligible Area for New Recipients (no SR)</i> | <i>Eligible Area for Existing Recipients (SR 0.12 LSU/ha)</i> | <i>Eligible Area for New Recipients (SR 0.12 LSU/ha)</i> |
|-------------------------------|--|---|---|--|
| Eastern Scotland | 1,260,965 | 128,361 | 1,010,131 | 35,170 |
| Angus and Dundee City | 174,302 | 16,472 | 136,008 | 3,918 |
| Clackmannanshire and Fife | 103,945 | 6,868 | 92,842 | 2,712 |
| East and Midlothian | 85,147 | 4,467 | 74,738 | 1,884 |
| Edinburgh, City of | 13,187 | 1,413 | 11,221 | 426 |
| Falkirk | 14,826 | 3,431 | 13,984 | 878 |
| Perth & Kinross and Stirling | 487,989 | 75,590 | 338,979 | 15,819 |
| Scottish Borders | 361,377 | 17,828 | 323,833 | 9,013 |
| West Lothian | 20,190 | 2,292 | 18,526 | 520 |
| Highlands and Islands | 2,206,371 | 788,316 | 1,160,833 | 48,397 |
| Caithness & Sutherland etc. | 672,713 | 378,220 | 268,522 | 10,031 |
| Eilean Siar (Western Isles) | 160,880 | 116,401 | 81,668 | 11,061 |
| Inverness & Nairn etc. | 392,002 | 129,646 | 221,189 | 10,052 |
| Lochaber, Skye etc. | 773,686 | 137,703 | 414,491 | 11,299 |
| Orkney Islands | 84,631 | 8,227 | 73,262 | 2,068 |
| Shetland Islands | 122,459 | 18,119 | 101,701 | 3,886 |
| North Eastern Scotland | 443,714 | 61,210 | 343,490 | 15,854 |
| Aberdeen City and 'shire | 443,714 | 61,210 | 343,490 | 15,854 |
| South Western Scotland | 819,012 | 61,488 | 733,593 | 21,050 |
| Dumfries & Galloway | 425,178 | 23,526 | 385,671 | 8,796 |
| E and N Ayrshire mainland | 110,076 | 10,484 | 95,419 | 3,270 |
| E&W Dunbartonshire etc. | 37,824 | 3,606 | 34,035 | 654 |
| Glasgow City | 602 | 117 | 392 | 21 |
| Inverclyde, E Renfrew. etc. | 32,569 | 4,062 | 28,933 | 731 |
| North Lanarkshire | 17,771 | 4,943 | 15,300 | 1,560 |
| South Ayrshire | 77,544 | 5,839 | 68,661 | 2,592 |
| South Lanarkshire | 117,448 | 8,911 | 105,182 | 3,426 |
| Cross-border Holdings | 6,284 | 121 | 48 | 0 |
| Missing Region | 0 | 1,558 | 0 | 0 |
| Grand Total | 4,736,346 | 1,041,053 | 3,248,094 | 120,472 |

3.3.3. Map of New Recipients by Parish

Figure 4 shows per parish the proportion of the total agricultural area made up by potential new recipients.

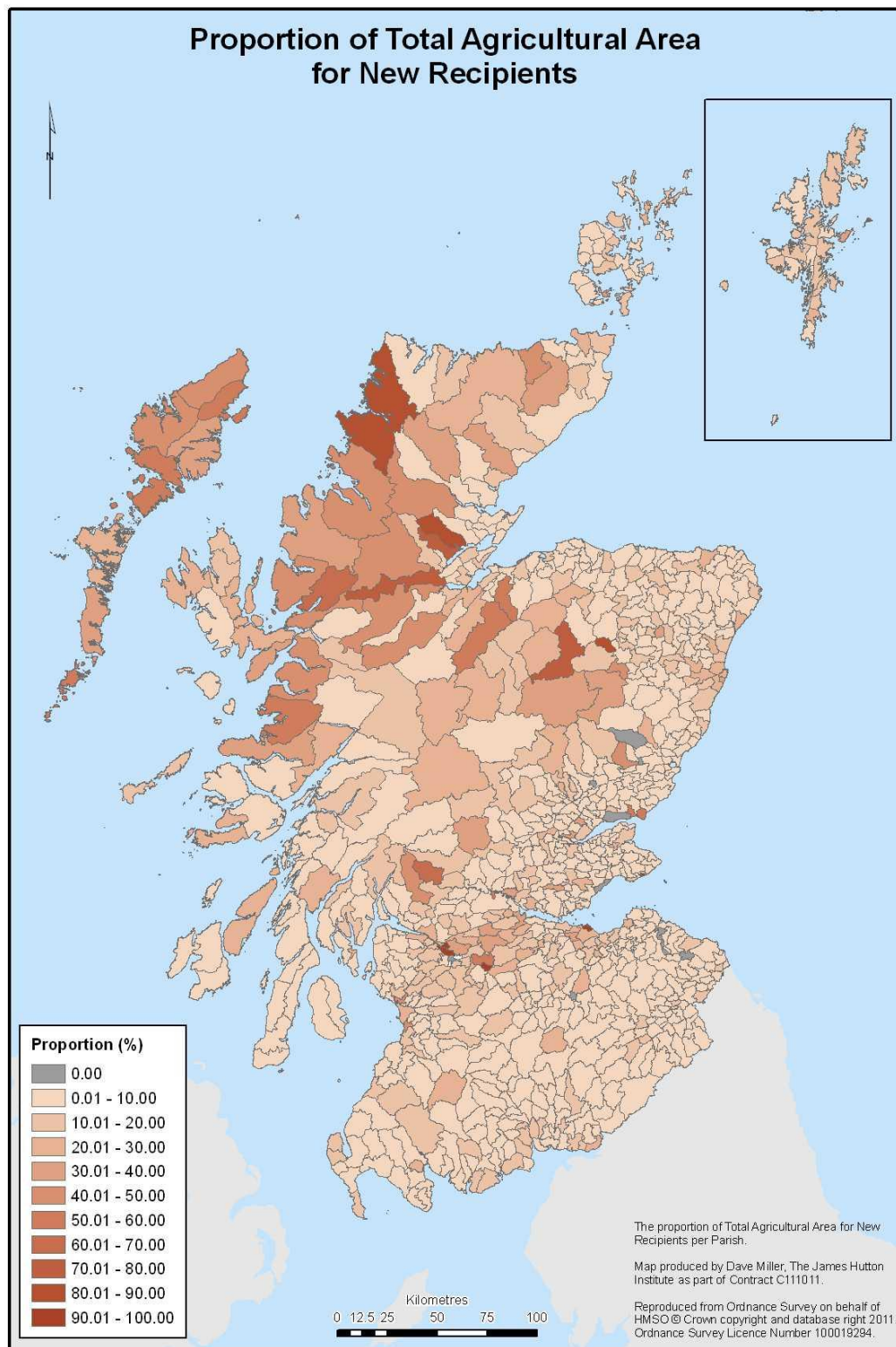


Figure 4: Proportion of Total Agricultural Area for New Recipients

3.4. New Recipient Size Distribution

Figure 5 shows the size distribution of the potential new recipient holdings and the total eligible area per size category. The left vertical axis shows the number of holdings (light purple) and the right vertical axis shows the total area of those holdings (dark purple). The top chart shows the owned eligible area (total of 1,365,035 ha) while the bottom chart shows the eligible area after adjustment for rentals (total of 1,041,053 ha). The difference in overall area between the two charts illustrates that a large area of land (net area of 323,982 ha) is being rented from holdings without SFP entitlement to holdings that do hold entitlements in 2009.

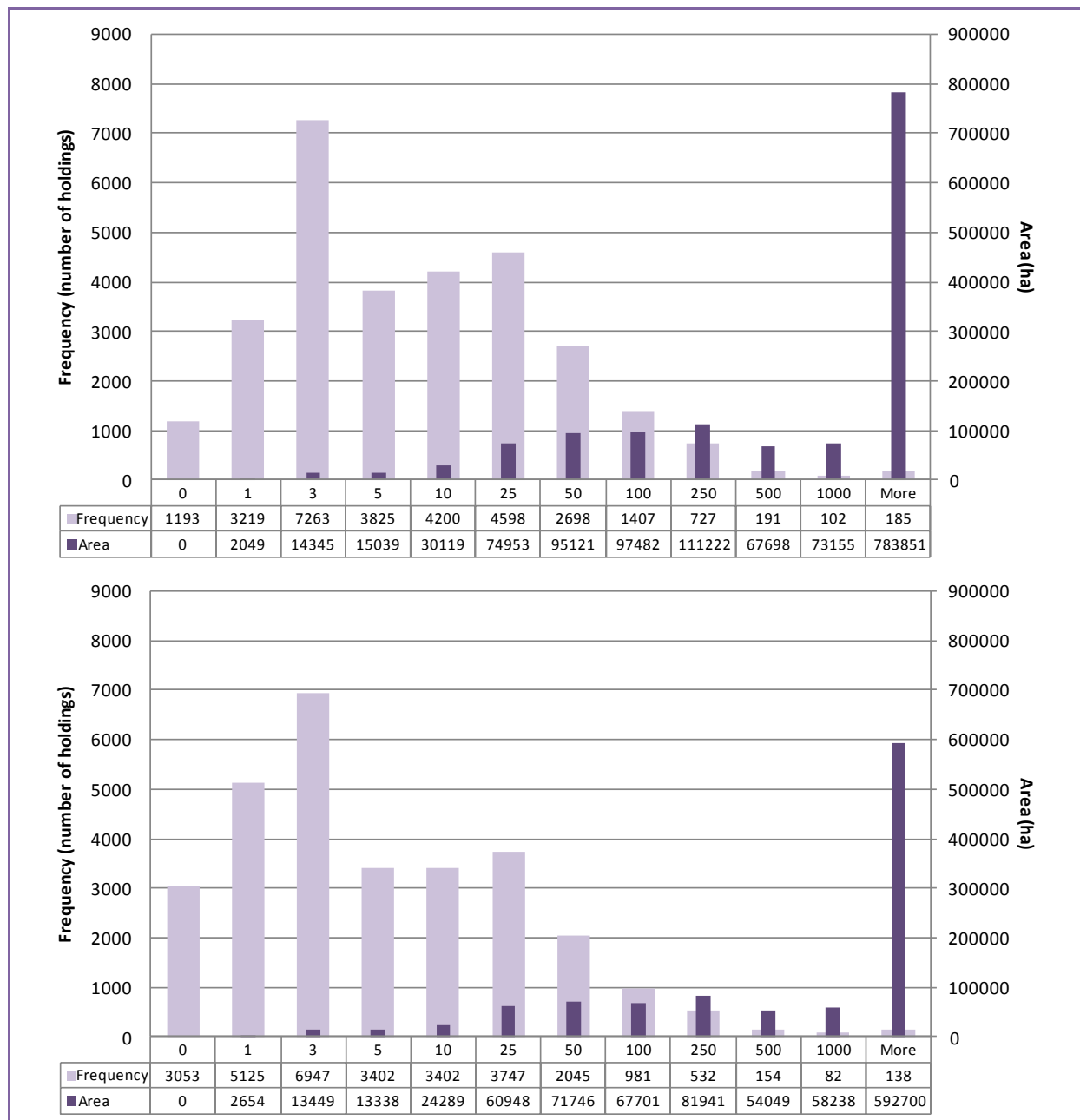


Figure 5: Size distribution of new recipient holdings (binned by eligible area) and the total area for each size category – top shows owned area and bottom shows used area (after rental adjustment)

The top chart in Figure 5 shows that 11,675 out of 29,608 holdings (39%) are less than or equal to 3 ha (of

eligible area) and that these holdings make up only 16,394 ha (1.2%) by area. Conversely there are 185 holdings (0.6%) with an area greater than 1,000 ha and these holdings make up 783,851 ha (57%) by area. The bottom chart shows a similar pattern.

The top chart in Figure 5 shows 1,193 holdings with a zero eligible area – these holdings have been included so that the overall number of potential new recipients can be established and also because a change in eligibility criteria or farmer behaviour could bring these holdings in. Note that the number increases to 3,053 in the bottom chart in Figure 5 because 1,860 holdings are renting out all of their eligible land.

Applying a stocking rate threshold to the data dramatically alters the distribution as can be seen in Figure 6. Note that the zero eligible area class exceeds the top of the scale in order to preserve the detail of the other categories.

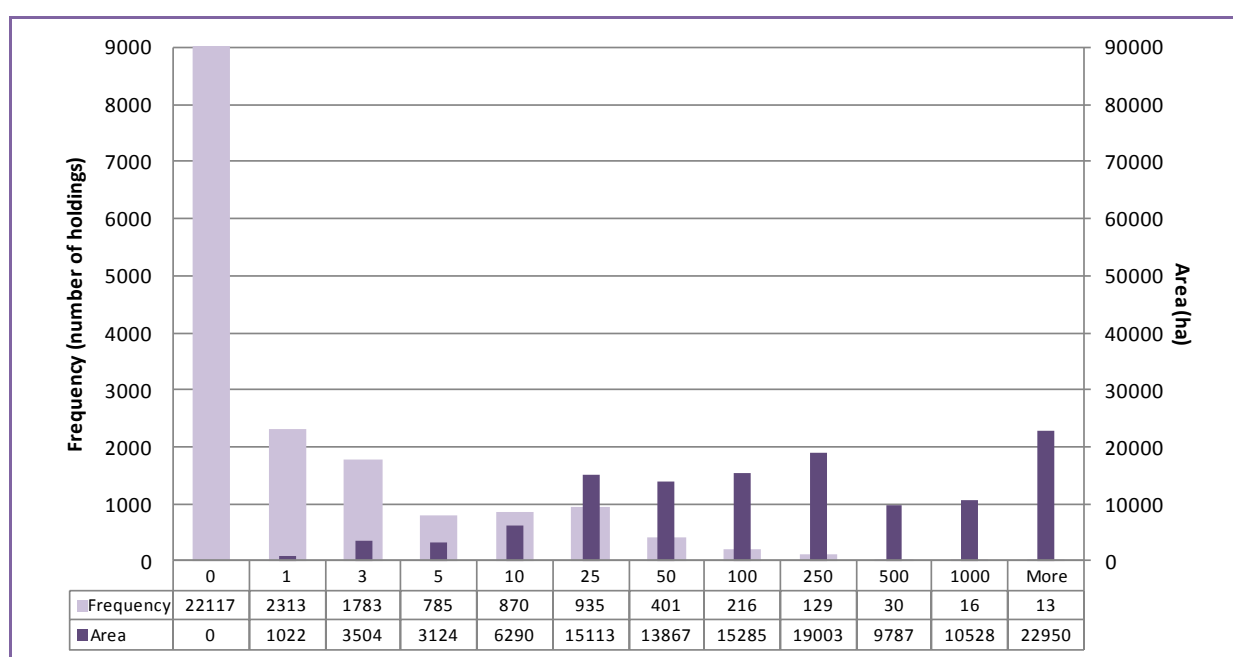


Figure 6: Size distribution of new recipient holdings (binned by eligible area) and the total area for each size category after the application of 0.12 LSU/ha minimum stocking rate

The use of a minimum stocking rate of 0.12 LSU/ha results in 88% of the (rental adjusted) eligible area for new recipients being excluded, giving an eligible area of just 120,472 ha (including 26,740 ha of cropped area). Consideration should be given here as to whether this would be the outcome in practice since the introduction of an area payment may make stocking some of these areas viable.

When considering only holdings with over 3 ha of eligible land, the chart shows that there are 3395 new recipient holdings with a total area of 115,947 ha. If a minimum farm size threshold is being considered then attention should be given to whether ineligible land should be counted towards farm size.

Figure 7 shows the distribution of *cropped* area amongst new recipients. Figure 8 shows the distribution of *livestock units* amongst new recipients.

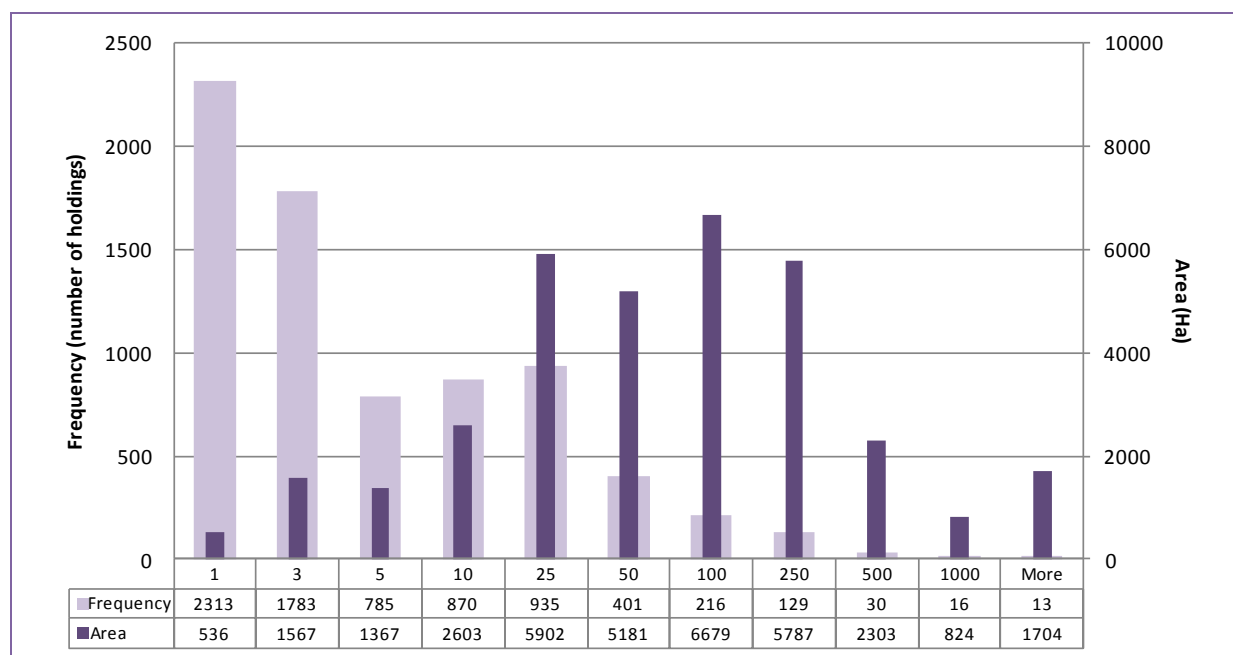


Figure 7: Size distribution of new recipient holdings with crop area greater than zero (binned by eligible crop area) and the total crop area for each size category

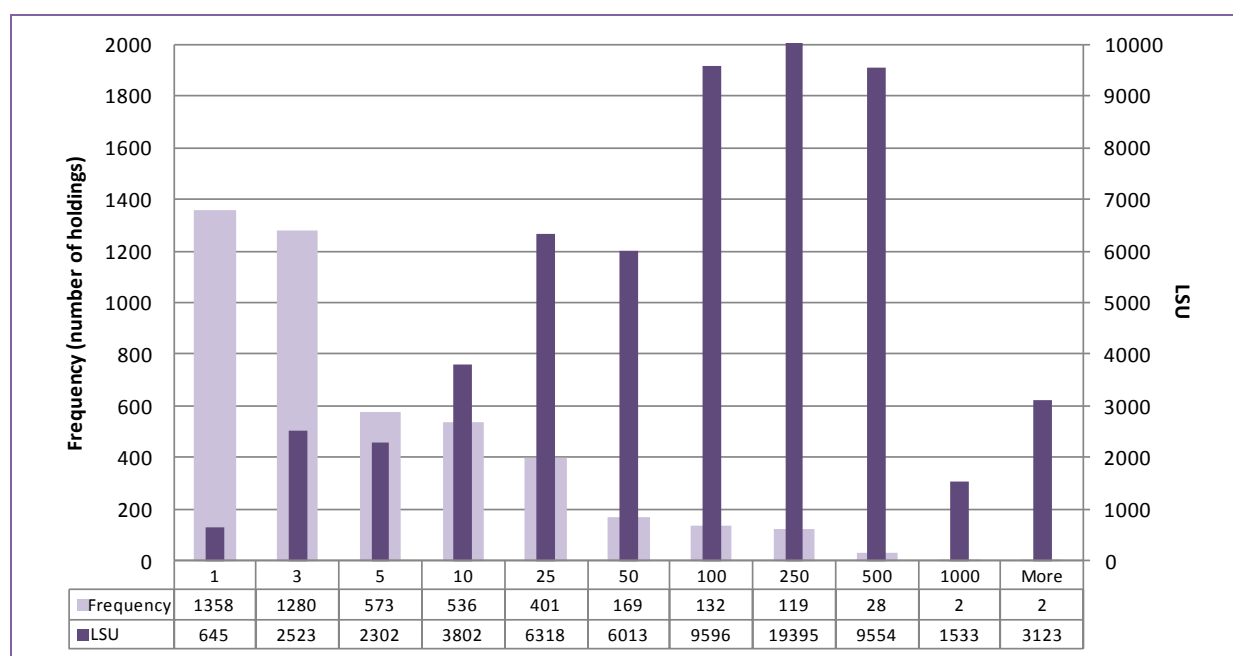


Figure 8: Size distribution of new recipient holdings with a number of livestock units greater than zero (binned by number of livestock units) and the total livestock units for each size category