



High Nature Value Farmlands Case Study Report

Iveragh Peninsula, South Kerry

2010



An Chomhairle Oidhreachta
The Heritage Council



Status of the Report

This report has been prepared for the Heritage Council by the European Forum for Nature Conservation and Pastoralism (EFNCP). Please note that this report does not necessarily constitute the views of the Heritage Council, but will be considered by the Heritage Council as it develops its work on High Nature Value farming and may inform future Heritage Council Policy on this and other related matters.

HNV FARMLAND CASE STUDY FOR SOUTH KERRY

Introduction

Kerry is a county in the Southwest of Ireland in the province of Munster (Figure 1). The county has an area of 4,746km² and a population of around 140,000 people. The landscape of the county varies from the lowland plains and rolling hills of North Kerry, the lakes of Killarney to the mountainous regions of the Beara, Iveragh and Dingle peninsulas. This landscape has greatly shaped the agricultural systems present in the county. Forty-six percent of the land area is made up of crops and pasture and a further 12 percent is under forestry, native and planted.

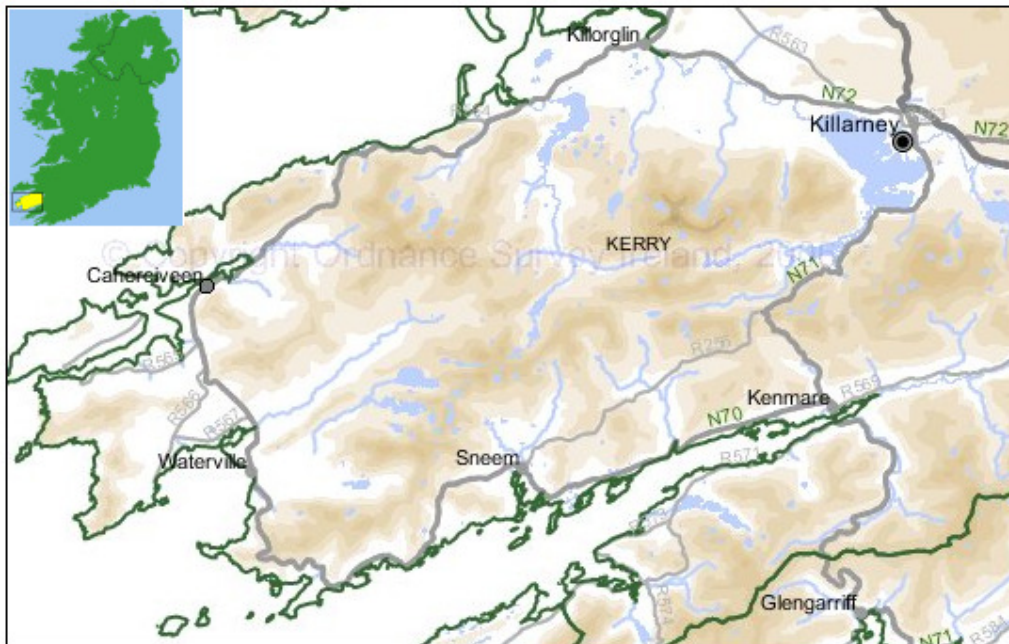


Figure 1. The Iveragh Peninsula in Kerry and its location within Ireland (inset).

Introduction to the Iveragh Peninsula Case Study.

The Iveragh peninsula forms part of the Kerry uplands with over 65 percent of its area classed as uplands, compared with only 22 percent nationally. The range of mountains known as the Magillicuddy's Reeks contains Ireland's highest mountain, Carrauntoohill (1041m). This is the most mountainous part of Ireland, featuring cliffs, deep pockets, exposed rock, glens and narrow passes (Crowley and Sheehan, 2009). The underlying geology is almost entirely Old Red Sandstone but with outcroppings of Carboniferous Limestone and Valencia Slate Formation. The area has an oceanic climate, heavily influenced by the Gulf Stream. It experiences mild winters 6°C (February Average, Killarney National Park) and cool summers (15°C July average, Killarney National Park). The mean average rainfall is 1,263 millimetres (49.7 in) per year, with 223 days in the year typically having more than 1 millimetre (0.039 in) precipitation. In the elevated areas, rainfall can increase to 3000mm. As a result of the high rainfall, poor agricultural soils and the mountainous topography, the area is designated as severely handicapped under the European Less Favoured Areas Directive (Regulation 950/97).

Population of the Iveragh in 2006 was 18,362, giving a population density of 11 people per km². Whilst the towns of Killarney and Kenmare on the eastern part of the peninsula are major towns, the interior of the peninsula remain relatively isolated with a dispersed pattern of settlement characteristic of pastoralist traditions in Ireland (Plate 1).



Plate 1. An isolated farmhouse on the Iveragh peninsula with its green in-bye land reclaimed from the mountain.

The Farming System

Agriculture in the west of Ireland has developed at a different pace to the east. Lower rainfall, better drained soils and closer proximity to markets in the east have led to a more intensive agricultural system. Conversely, in the west, higher rainfall, poor draining soils and remoteness to the market all have led to extensive farming systems. Changes to land through reclamation, drainage and reseeding have occurred in many areas of the west but in the more marginal areas, like the Iveragh Peninsula, an extensive farming system is still prevalent. Small areas of green land, called in-bye land, exist around the dwelling house. Historically, these formed part of a cropping rotation with the production of potatoes and corn to ensure self-sufficiency for the farm. This practice is now rare but the in-bye land plays an important role in determining the stocking capacity of the farm. Throughout the area, there is evidence of land reclamation to increase the percentage of in-bye land of the farm holding.

A detailed survey of 80 farmers in the Iveragh Peninsula was undertaken in 2007-2008 as part of a three year research project funded by Science Foundation Ireland (SFI) to acquire a knowledge of the farming systems, ecology and people of the Peninsula (*Kramm et al.* 2010). Just over half the people surveyed (54.2 percent) operated a mixed farming system, combining cattle with sheep farming, whilst a further 33.3 percent and 5.6 percent were specialist sheep and specialist beef

producers respectively. There were no specialised dairy farmers in the area although 7 percent of households combined a small scale dairying operation with an average of 3.39 dairy cows along with another enterprise. Suckler cows were the most popular beef production system with an average herd of 11 cows. Sheep farming centred mainly on the production of store lambs, although one third of farmers did finish lambs. The average sheep flock was 216 ewes with a weaning success of 0.86 lambs/ewe.



Plate 2 and 3. On the left: mixed grazing of cattle and sheep on a Kerry farm. On the right: sheep grazing in the uplands.

The traditional sheep system has been recorded by O'Rourke and Kramm (2009). The sheep remained outdoors all year round, being brought to the green land around the lambing period, at the end of March or in early April. They remained there until strong enough to follow their mothers up the hills for summer grazing, around early June. Store lambs were traditionally sold in the autumn (August/September) to lowland producers for fattening. Some cattle were also kept on the farm and were put to the hill during the summer. The Kerry cow, a traditional breed of cow, was common (Plate 4). Some of the green land was used for the production of hay to feed the cattle in the winter period which were often housed in small byres. The cattle manure produced was an important source of nutrients for the potato crop.



Plate 4 and 5. Right photo shows a traditional Kerry cow outwintered on the lowlands; left photo shows the traditional blackface ewe found in the uplands, although brought down to the in-bye land at different times of the year.

Within the area, there are still some farmers operating this basic system but over the years, there have been changes. Changes in agricultural subsidies led to a dramatic

increase in sheep numbers in the 1980s and 1990s and now the Iveragh uplands are exclusively associated with sheep production. Cattle production in the form of suckler cows still exists in the lowland farms of the Peninsula. On many farms, sheep are bought down from the hills during the lambing period to the in-bye land and/or housed. Supplementary feeding with hay and concentrate form the bulk of the sheep's diet. The sheep are also moved down to the in-bye land at mating time, a process known as flushing, which increases the number of twin lambs.

Commonage

A feature on many of the Iveragh farms is that much of the upland is not owned but grazing rights are shared between two or more farmers, and the areas involved are known as commonage. Traditionally, a farmer's portion of the commons was calculated in terms of a "collop" which was the grazing equivalent of one cow. These commonages form an integral part of the farm as they are the main grazing area for the sheep. The majority of the commonage resource in the Republic of Ireland is concentrated along the western seaboard. In total, 4 western counties Mayo, Galway, Donegal and Kerry account for over 70 per cent of the commonage in the Republic of Ireland (Buckley *et al.*, 2008). The total commonage area in the Republic of Ireland stands at 441,125 hectares. The Census of Agriculture in 2000 indicated that there were 11,837 farms (8 percent nationally) using commonage for agricultural activity (Central Statistics Office, 2000). The majority of commonage (approximately 80 percent) is mountain or hill commonage and is traditionally associated with extensive livestock grazing. The majority of farmers have commonage grazing rights of less than 30 hectares, however about one-third of the total commonage area in Ireland is shared among 200 farmers. Based on the survey by Kramm *et al.* (2010) on the Iveragh Peninsula, commonage made up 52 percent of the farm area, thus highlighting the importance of commonage to the farming system. Commonages are also widely recognized as being of exceptional conservation value and recreational appeal. Commonage land on the Iveragh peninsula is shown in Figure 2.



Figure 2. Map of the Iveragh Peninsula showing commonage areas (Source: National Parks and Wildlife Service-NPWS)

Commonages suffered from overgrazing in the 1980s when livestock premia schemes were introduced in the form of headage payments with the introduction of the European Mountain Lamb and Hoggett Ewe Scheme in the 1970s (Directive 75/268 and the introduction of the European Ewe premium in 1980 (Regulation 1837/80). This naturally led to an expansion in sheep numbers. O'Rourke and Kramm (2009) stated that, according to local farmers, the average mountain stocking density went from one sheep per 0.40ha to more than 2 sheep per 0.40ha. Overgrazing had a severe effect on the hills with the disappearance of dwarf shrubs such as heather and bilberry and the dominance of a grass and sedge species poor vegetation (Plate 6). The overgrazing problems led the government to introduce the Commonage Framework Plan (CFP) in 1998 which brought about a compulsory destocking on all commonages. On inspection by a team of experts, the destocking levels could be raised by up to 100 percent. The farmers were compensated for all animals destocked through the Rural Environmental Protection Scheme (REPS) or by Dúchas- the Heritage Service. The Dúchas Scheme paid compensation on the basis of proven loss of income, while REPS payments were fixed and were area-based.



Plate 6. A sward dominated with Mat grass (*Nardus Stricta*) as a result of overgrazing

Present Farm Structure

In total, there are 2,023 on the Iveragh peninsula, the majority of which are under 30 ha in size (O'Rourke and Kramm, 2009). From the sample of 80 farms surveyed by Kramm *et al.* (2010), the mean farm size was 114ha for commonage land and 176ha on private land. However, there was considerable variation within these figures. The mean sheep flock size was 212 ewes on the commonage farms and 225 on private holdings resulting in an overall stocking rate of 0.38LU/ha and 0.29LU/ha respectively. Stocking rates were similar in the more upland areas, calculated as 0.29 LU/ha on commonage and 0.28LU/ha on private land. However, stocking densities were higher on commonage during the shorter grazing season than on private land, 0.55LU/ha compared to 0.36LU/ha.

Case study Farms

A. Coastal Farm

This farm is situated on the coast but rises up into the adjacent higher mountain land. The farm contains 20 hectares of green in-bye land and an adjacent 38 hectares of commonage. The total area of the commonage is 270ha with 10 different farmers owning a share. However, only two of the farmers presently graze the commonage and, as a result, the farmer thinks it is badly under grazed. Prior to compulsory destocking, the farmer had around 200 ewes and 6 suckler cows. Stock numbers are now down to 100 blackface and 1 store beef animal, which will be slaughtered for home consumption. The sheep are taken off the mountain prior to lambing in March and remain on the green land during the summer. All lambs are sold as stores with most of the ewes going back to the mountain in August/September. Hay is no longer made on the farm but purchased from other farmers as a supplementary feed during the winter.

B. Mountain farm

This farm is situated inland in the heart of Macgillicuddy's Reeks. The in-bye land is approximately 20ha, much of which was reclaimed from the mountain in the 1980s. The remainder of the farm is commonage, a 53-hectare share of a total of 308 hectares. Six different farmers all have rights on the commonage and all are actively farming it. The present stock on the farm includes 250 ewes and 1 cow and calf. Prior to compulsory destocking, there was approximately 380 ewes and 11 cows. The farmer has no plans to farm cattle again. This is a feature on many farms and the one cow this farmer owns is now the only cow left in his local area. The resulting decline in cattle is thought to be associated with the spread of less desirable vegetation such as bracken (*Pteridium aquilinum*) and gorse (*Ulex europaeus*). On this farm, the sheep graze the mountain during the summer coming down to in-bye land in October and only the ewe lambs are returned to the mountain during the winter. The farm has some purpose-built sheep housing, so the ewes are housed for about six weeks during the winter and go back to the mountain after lambing in the spring. In the past, an area of the farm was closed off for hay but now fodder is purchased from other parts of Ireland. The lambs are all sold for slaughter through the Ring of Kerry Quality Lamb Group, a recently formed marketing group promoting and selling quality lamb from the area.

Nature Value of the Iveragh Peninsula

The traditional farming systems associated with the uplands of Ireland have created the present landscape. The maintenance of this landscape is dependent on the retention of these farming systems within the area. The ecological interest of the area is reflected in the high percentage of the land area designated under Natura 2000 sites. This includes the Killarney National Park, MacGillicuddy's Reeks and Caragh River Catchment SAC, part of Castlemaine Harbour SAC, Kenmare River SAC, Killarney National Park and Iveragh Peninsula SPA (Figure 3).

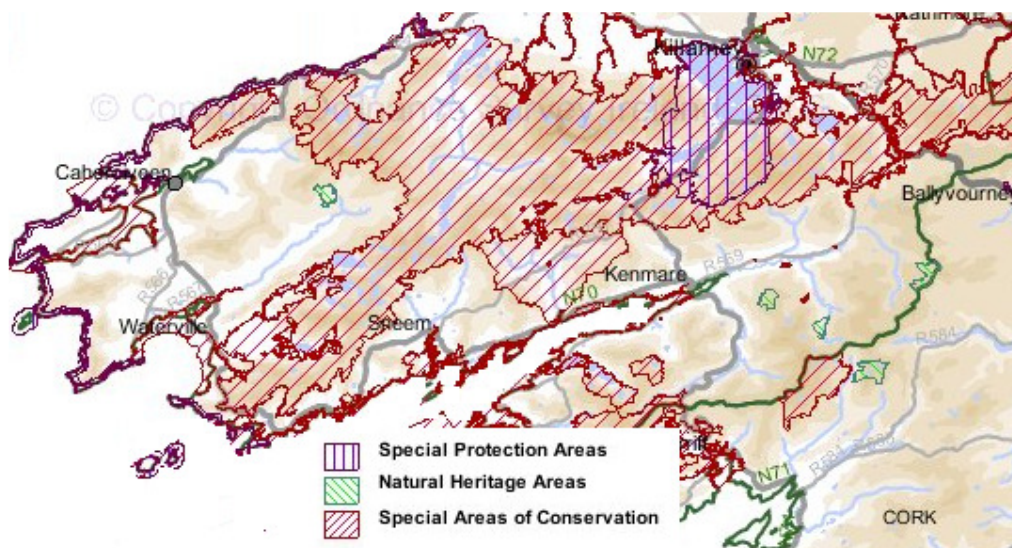


Figure 3. Designated land sites on the Iveragh Peninsula (NPWS).

Based on distribution maps from the National Parks and Wildlife Service, of the total 59 recognised Annex I habitat types in Ireland, 49 can be found within the Iveragh Peninsula, making it one of the major hotspots for biodiversity in Ireland. Of these 49 sites, at least 8 are dependent on a sensitive agricultural system for their survival. These also form the main area of designated land. Factors such as undergrazing, overgrazing, nutrient enrichment drainage and reclamation will all have adverse effects on these sensitive habitats. The main farmed habitat types found on farms on the peninsula are shown in Table 1.

Table 1. Annex I habitat sites dependent on a agricultural system for their survival.

No.	Habitat	Distribution	Relevance to HNV farmland
1330	Atlantic Salt meadows	Located around the coast of the peninsula	Sensitive to overgrazing, management depends on whether they have historically been grazed. The cessation of grazing on sites previously grazed can led to overgrown species-poor swards.
1410	Mediterranean salt meadows	Located around the coast of the peninsula	Sensitive to overgrazing, management depends on if they have historically been grazed. The cessation of grazing on sites previously grazed can led to overgrown species-poor swards.
4010	Wet heath	Widespread throughout the upland areas	Sustainable stocking levels required to prevent degradation. Also under threat from reclamation and afforestation. Abandonment will lead to scrub invasion.
4030	Dry heath	Located throughout the peninsula on more free draining acid soils	Sustainable grazing levels required. Main threats are agricultural improvement and abandonment of pastoral systems.
4060	Alpine and subalpine heath	Mostly confined to the summits and	Sensitive to grazing management. Abandonment on

		slopes of the mountains above 350m	some alpine heaths may lead to scrub invasion.
6230	Species rich <i>Nardus</i> upland grasslands	Found mainly in the central band of the peninsula on slopes between improved grassland and heaths	Under threat from agricultural intensification (overgrazing or the application of fertiliser and reseeded), also to agricultural abandonment (undergrazing, leading to invasion by scrub, bracken and heathland) and afforestation.
6410	<i>Molinia</i> meadows	Found throughout the peninsula on heavy acid soils	Under threat from agricultural improvement and abandonment (undergrazing leading to scrub invasion particularly gorse (<i>Ulex europaeus</i>)). An important habitat for the Annex II butterfly species Marsh Fritillary (<i>Euphydryas aurina</i>).
7130	Blanket Bog Active	Throughout the peninsula on upland areas with flat or sloping surfaces with poor drainage	Overstocking with sheep is the main damaging activity affecting blanket bogs. Total abandonment can lead to invasion of damaging species particularly Rhododendron (<i>Rhododendron ponticum</i>).

Fauna of Iveragh

The European Habitats Directive also lists species that must be protected. Excluding marine species, 22 are listed under Annex II of the directive and so require protection through the designation of SACs. Thirteen of these species can be found on the Iveragh Peninsula. Many of these survive in the area because of the low level of agricultural intensity and a change in the farming system has a negative impact on their distribution. Species present include the Kerry Slug (*Geomalacus maculosus*), found only in south west Ireland and on the Iberian Peninsula. In Kerry, it is found in two habitat types: oak dominated woodland and open moor or blanket bog. One species found on the peninsula which is declining throughout Europe is the Marsh Fritillary butterfly (*Euphydryas aurinia*) (Plate 7). It is found on damp grassland containing sufficient densities of its food plant, Devil's bit Scabious (*Succisa pratensis*). The species disappeared from Killarney National Park but was reintroduced in 2006 with stock gathered elsewhere in Kerry (Harding 2008). The correct agricultural management of its habitat is vital to prevent scrub encroachment and to maintain the required density of Devil's bit Scabious.



Plate 7 and 8. The Marsh Fritillary butterfly, an Annex II species on the EU Habitats Directive with its feed source, Devil's Bit Scabious, on the right.

Another important species found in Kerry is the Natterjack Toad (*Bufo calamita*). Its natural range is confined to a small number of coastal sites on the Dingle and Iveragh Peninsulas. Historically, the species has been recorded right along this Kerry coastal strip. The NPWS have been active in recent years encouraging the creation of new ponds to extend their range and allow migration between breeding sites (Plate 9). The continued survival of the Natterjack toad is dependant on the farming community.



Plate 9. A photo from the NPWS information leaflet highlighting the importance of grazing around the ponds to provide forage areas for the Natterjack Toad (Source: NPWS).

Birds of Iveragh

The European Union Birds Directive (79/409/EEC) identifies species of birds which are rare, in danger of extinction or vulnerable to changes in habitat and require protection. Three Special Protection Areas (SPAs) have been designated in the area, Castle Maine Harbour SPA, Killarney National Park SPA and Iveragh Peninsula SPA. Castlemaine Harbour Spa is predominantly sea based with a small section of coastline. It was declared an SPA for a range of bird species, including 5 species listed on the Annex I list and 16 species with national importance. Killarney National Park SPA includes the most southerly site in Ireland for the Greenland White Fronted Goose population. It also contains Peregrines, Merlin, Red Grouse and Ring Ouzel. The Iveragh Peninsula SPA encompasses the high coast and sea cliff sections of the peninsula. The site is of special conservation interest for the Chough, Peregrine, Guillemot, Fulmar, and Kittiwake. The Chough is particularly relevant to High Nature Value farming. Choughs largely feed on soil invertebrates and grazing by domestic livestock helps provide the variety of year round feeding opportunities needed. Short swards and exposed soils facilitate access to food sources. Table 2 shows the Chough counts for three different areas in Ireland and highlights the importance of the Iveragh peninsula as Chough site.

Table 2. The number of breeding pairs of choughs in three areas of Ireland.

Area	1982	1992	2002
Iveragh Peninsula SPA		109	88
Aran Islands	36	21	19
N.Ireland (Antrim coast)	10	2	1

The decline in Chough numbers on the Antrim coast is thought to have been due to the loss of semi-natural grasslands and coastal heaths through intensification of grazing management, increased housing of cattle in the winter and improved veterinary products (DOE, 2000), while on the Aran Islands, a fall in numbers on Inis Mór may be linked to a decline in grazing on the island (Gray *et al.*, 2003).



Plate 10. The Chough thrives where low intensity farming systems occur close to suitable nesting sites. The Iveragh Peninsula is an important European nesting site for the Chough. (Photo© RSPB)

Other Natural Resources

The Iveragh Peninsula contains “the Ring of Kerry”, one of the top Irish tourist destinations and designated as an Area of Outstanding Natural Beauty (AONB). The 179km route that winds past pristine beaches, the island-dotted Atlantic coast, medieval ruins, mountains and lakes attracts an estimated 1.8 million visitors every year. The mountains of the peninsula are an important outdoor attraction, containing the highest peaks in Ireland and regarded as having the most spectacular ridge walks in Ireland. The area also contains some of Ireland’s best whitewater kayaking on the Carragh, Gaddagh and the Flesk rivers. The network of lakes and rivers are also prime fishing areas for salmon and sea trout.

Policy issues

Whilst the majority of the Iveragh Peninsula is farmed extensively, there are some areas consisting mainly of intensively managed improved grassland. The bulk of this grassland type is situated in the lowlands but it can also be found in the more upland areas where reclamation has occurred. Whilst these farms suffer many agricultural disadvantages due to factors such as climate, distances from markets, their improved agricultural state means higher stocking rates are possible. They are also usually outside of the designated areas and so have less statutory restrictions. Farms on the peninsula with large areas of improved grassland would not be classed as HNV farmland. On many farms, these improved grassland areas are part of a mosaic of semi-natural grassland and heather moorland with the different habitat types being an integral part of the farm system. This farmland would fit into Type 2 of HNV

farmland. Along the coast, some of the tightly-grazed grasslands are important feeding sites for the Chough, an Annex II species under the habitats directive; therefore, there may also be some Type 3 HNV farmland on the peninsula.

The Iveragh Peninsula faces the same problems faced by other marginal agricultural areas across Ireland and Europe, due to the low agricultural returns of the farming system. On the peninsula, this is leading to intensification of both mountain and lowland areas and undermanagement on many areas leading to scrub encroachment. The large area of land designated as SAC does prevent further intensification, which is evident outside the SAC areas but the range of stocking rates considered favourable to the conservation of these habitats may be lower than the stocking densities considered as economic for the farmer. This has been partially addressed by REPS and NPWS scheme but both schemes are presently closed for new applicants. The Bio-Up Farm Management Survey 2007-2008 shows that just under 70 percent of the farm income is composed of direct subsidies, Single Farm Payment (SFP) and agri-environmental schemes (REPS), highlighting the importance of subsidised support in maintaining farming in these marginal areas.

In addition to the challenging economic conditions for farming in the area, there are other factors affecting the overall situation.

- Lack of alternative employment in the area, particularly since the decline in the construction industry. The Bio-Up survey found that construction constituted 20 percent of the surveyed farmers off-farm employment.
- Lack of potential successors to carry on the farming tradition with over 50 percent of farmers surveyed under the Bio-Up project having no definite successor.
- Isolation of many farm houses. The structure of Irish agriculture with the farm house being situated in the centre or base of the farm is very evident on the Iveragh Peninsula with houses dotted throughout the peninsula.

As a result of the factors mentioned, the main threats in maintaining the high nature value of the area are intensification and undergrazing as a result of lower management inputs. The level of afforestation in the area is lower than other marginal areas due to the high area of land designated as SAC and SPAs and a high proportion of the peninsula is classed as an acid sensitive area which also has restrictions on forestry planting.

Agricultural Intensification

Agricultural intensification has been an ongoing process on the peninsula since mankind arrived. As stated previously, many of the habitats present are as a result of agricultural processes. The green in-bye land on most mountain farms has been as a result of reclamation, cropping and eventually grassland. This reclaimed part of the farm is an integral part of the farming system and often dictates the number of livestock kept on the farm. The demand for food after the Second World War led to a push for a more intensive type of agriculture and this has dominated agriculture policy until recently. The detrimental effects of agricultural intensification on wildlife are well documented (Fuller, 1987; Smith, 1994; Bignal & McCracken, 1996; Robinson & Sutherland, 2002). However at a farm level, it still offers potential for higher

stocking rates, improved forage quality and a simpler management system. Therefore where funds are available, there is still a strong desire in the farming community to reclaim areas of semi-natural vegetation. The Directive on Environmental Impact Assessment (EIA) (85/337/EEC as amended) requires that the impacts of intensive agriculture on semi-natural areas should be subject to environmental assessment (annex 2 (1) (b)). However, there is a 100ha threshold before an EIA is required, so the ongoing reclamation falls below this threshold.



Plates 11 and 12. Examples of present day reclamation encroaching into the mountain vegetation on the Iveragh Peninsula.

In addition to direct intensification through reclamation and reseeding, the effects of indirect intensification are evident throughout the peninsula. Indirect intensification is where the changes in management over the years have resulted in a change of vegetation from semi-natural to semi-improved grassland, which leads to a reduction in plant species number. This has been as a result of increased fertilisation and higher stocking rates. Field studies have shown that, in general, plant diversity is significantly reduced even for fertiliser levels which are low in comparison to normal application rates in intensive grassland. For nitrogen, a reduction of half of the total number of plant species can be observed for fertilisations between 20 and 50kg/ha/year and the average number of species is very low where nitrogen inputs exceed 75kg N/ha/year (Plantureux *et al.* 2005).

Increased grazing levels on grasslands also lead to reduced plant diversity (Olf & Ritchie, 1998). Heavy grazing produces short dense swards that generate little seed resource and offer limited foraging and shelter opportunities for many invertebrates (Morris 2000). This reflects the work carried out by Kramm *et al.* (2010) on the Iveragh Peninsula which showed that higher stocking levels did lead to reduced plant diversity.

Undergrazing

The survey by Kramm *et al.* (2010) found that, in spite of the widespread hypotheses about land abandonment, there was little evidence of abandonment either taking place or being likely to happen in the near future. However, they did find undermanagement being an issue on some hills. Baudry (1991) describes abandonment as a change towards a less intensive pattern in land concerned or where the soil stops being managed and used. The complete abandonment of land on the peninsula is unlikely due to present land values and it is also possible for a

neighbouring farm to use the land for an agreed rent, a process known as conacre. The strong Irish tradition of the family farming passing on from generation to generation is evident on the Iveragh Peninsula as quoted by Kramm *et al* (2010). However, the change towards a less intensive land use is evident throughout the peninsula. This has resulted in invasion of scrub and trees leading to a loss of farm habitats. Such losses of High Nature Value (HNV) farming has serious consequences on wildlife living in farm habitats, both in terms of abundance and species composition (Reif *et al.*, 2008; Russo, 2007).



Plates 12 and 13. An example of undermanagement in the uplands. On the left, a once active farm now slowly being engulfed with Gorse (*Ulex europaeus*) and right Rhododendron (*Rhododendron ponticum*) starting to spread in the mountains.



Plates 13 and 14: An example of undermanagement in the lowlands. On the left, a former lowland haymeadow now overgrown with bracken (*Pteridium aquilinum*) and Montbretia (*Crocsmia x crocosmiiflora*). On the right, the fields in the foreground are still actively managed whilst the adjacent farm is no longer managed and scrub is taking over.

Whilst most of the increase in scrub is associated with reduced stocking levels, many traditional practices are no longer maintained due to the poor economics of farming in these areas and the changes that have occurred in farming systems. Traditional gorse (*Ulex europaeus*) was kept under control by hand cutting and was used as a source of protein, particularly for horses. Plate 15 shows a gorse grinder on a farm in the area which the owner once used. Rushes (*Juncus effusus*) and bracken (*Pteridium aquilinum*) also had a value as they were used for bedding and in the storage of potatoes. Once this use ceased, the economics of controlling these species became

prohibitive. This highlights how small changes in the agricultural system can have a negative environmental effect.



Plate 15 and 16. On the left, a machine used to grind gorse for use as a livestock feed on a farm in Kerry. On the right, the spread of soft rush and bracken presently confined to the boundaries as a result of active management.

Kramm *et al.* (2010) found that the higher the percentage of scrub on a site, the lower the plant diversity. An intermediate level of litter resulted in the highest plant diversity. This is in accordance with the work of Morris (2000) who showed that too-low stocking rates produce patches of tall rank vegetation and that the accumulation of dead vegetation and litter are depressive for plant seed germination. Although this is favourable for some invertebrate species like spiders, at a very low stocking rate the density of the sward and litter layer means that invertebrates are generally not really accessible to foraging birds so an intermediate stocking rate seems to be optimal for foraging birds as well.

Future Recommendations

The importance of the Iveragh Peninsula as an area of High Nature Value farmland needs to be fully recognised by the farming community and its representatives. The area offers a range of services, other than food production, that are not always recognised in present policies. Livestock production on its own is insufficient to maintain farming families in the area. This is leading to two different dynamics:

- intensification in an attempt to increase agricultural output or
- abandonment where the land is not farmed or farmed at very low stocking levels.

Both of these dynamics are leading to an overall loss in biodiversity in the area. To address requires targeted agricultural and agri-environment support that encourages the appropriate low-intensity farming systems and will deliver both food production and ensure the maintenance of the farmland biodiversity value associated with the area. Achieving this will be difficult and will require conservationists and agriculturists to work in partnership with local communities to trial, research and monitor a number of possible solutions for the sustainable management of the areas. Similar approaches have been successful within Europe and include BurrenLIFE, now managed as the Burren Farming for Conservation Programme (BFCP) which worked closely with farmers and other experts to produce a blueprint for farming in the Burren (see <http://www.burrenlife.com/>). Funding was obtained for BurrenLIFE

through the European LIFE Nature fund and for the BFCP from Article 68 of EU Regulation 73/2009. Under Article 68 support can be paid by the member state to specific types of farming which are important for the protection of the environment. A similar approach was previously adopted on the Baltic Island of Öland in Southern Sweden (Emanuelsson, 2004). The Öland method, as championed by Urban Emanuelsson, also dealt with the agri-environmental management of semi-natural pasture in a limestone landscape, the Stora Alvaret.

The issues that needed to be targeted include:

Grasslands: Whilst the peninsula is primarily known for its upland mountain vegetation, it still contains significant areas of semi-natural grassland, some listed under Annex I of the European Habitats Directive. To prevent further loss of semi-natural grassland, some areas need to be brought back into sustainable management. Removal of some unwanted vegetation (Plates 13 and 14) will help in the restoration of these previously species-rich grasslands and limit the intensification on other areas. However, to remove this vegetation sensitively without excessive damage to the underlying sward will require investment which is currently unavailable. At present, only semi-natural grasslands within a designated area or over 100ha in size (EIA threshold level) have protection. Therefore, their survival is dependent on their being managed under low fertility and low agricultural stocking rates. This agricultural system cannot presently compete with a more intensive productive sward, therefore the basis of a targeted scheme should recognise this.

Uplands: Much of the privately-owned mountain land within the peninsula is designated under the EU Habitats Directive. Maintaining these sites in favourable conservation status is one of the central purposes of the Habitats Directive. However, the range of stocking densities considered most favourable to the conservation of the habitat may be lower than the stocking densities considered as agriculturally optimal. This has been recognised by schemes such as REPS and the National Parks and Wildlife Service Farm Plan Scheme. However budget constraints have curtailed the activities of these schemes. A targeted scheme could address this by supporting farming for food and conservation.

Commonage: The commonage suffers similar problems to the privately-owned upland areas. However, as they are not in private ownership, they have suffered more with overgrazing, resulting in the implementation of the Commonage Framework Plan (CFP) that brought about a compulsory destocking on all commonages. There is a perception among farmers that understocking is now a threat. Some of the farmers with commonage rights no longer keep sheep on the mountain, a fact highlighted in the farm case study quoted previously. To maintain these areas in a favourable condition, consideration should be given to developing a total grazing allocation for individual commonages. The total allocation of sheep numbers could be utilized by the farmers actually farming the commonage and not the total shareholders. This will require agreement among the shareholders and sufficient financial support to make it feasible. To determine a correct grazing allocation, information will be required on the types and area of land cover within the commonage areas.

Education: For any targeted scheme to be successful, all the participants must be fully aware of what the scheme is aiming to achieve. In the case of the farming community, this will require an understanding of why their area is so important and

why the correct management is crucial to survival of many habitats. Therefore, there will be a need for targeted training on HNV farmland covering the species present (rare and harmful) and the best practices for combining farming and conservation. For government bodies, there is the need to see the potential of farmers in managing the countryside both for conservation and for farming.

Marketing: Whilst marketing is outside the scope of this case study, the success of the Ring of Kerry Quality Lamb Group (see <http://www.ringofkerryqualitylamb.ie/>) indicates that the area presents a marketable brand for food production. Pro-active marketing of produce based on the High Nature Value concept can help make farming in the area more financially feasible. Recent advertisements by Bord Bia (Irish Food Board) showing the potential of Irish agriculture display High Nature Value farmland, highlighting the importance of HNV areas to the whole Irish food sector.

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