

# LINNET Project

Lands Invested in Nature - National  
Eco-Tillage

National Parks and Wildlife Service

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# Trends in agriculture

Major changes over the last few decades:

- Intensification
- Specialisation
- Loss of small scale mixed farming



# Traditional farming practices Kerry



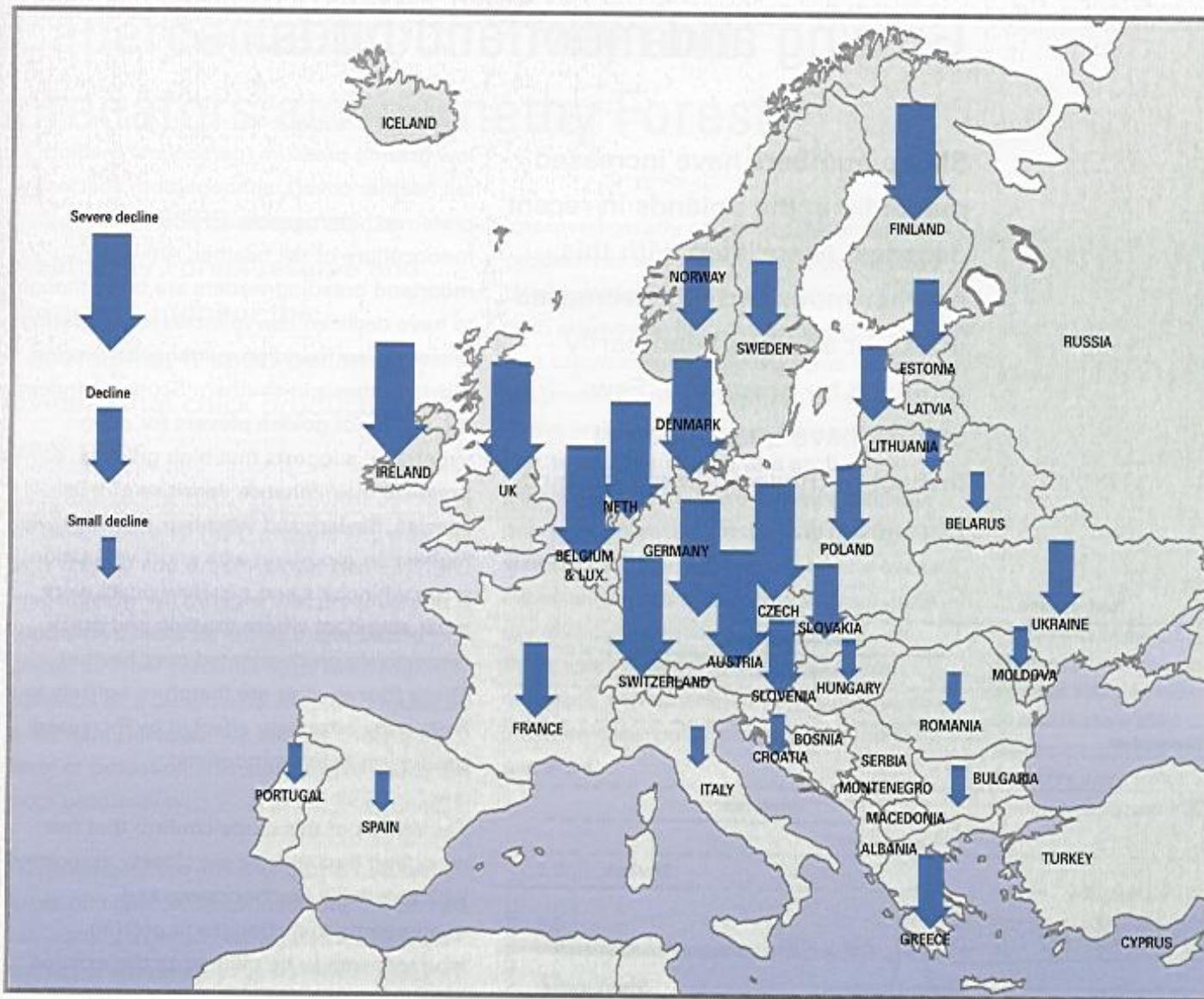
# Impact on wildlife

Loss of mosaic of habitats in a non-intensive rotational system lead to decline of :

- agricultural weeds (Corn Cockle, Cornflower, etc)
- bird species (Corn Bunting, Corncrake, Grey Partridge, Barn Owl, etc)
- other species
- landscape



# Decline in farmland birds (RSPB)



No	Common name	Scientific name	Status -RDB	Comment
1	Corn Cockle	<i>Agrostemma githago</i>	Extinct	
2	Cornflower	<i>Centaurea cyanus</i>	Extinct	Found on Aran Islands.
3	Chamomile Corn	<i>Anthemis arvensis</i>	Extinct	
4	Sheperd's Needle		Extinct	
5	Darnel	<i>Lolium temulentum</i>	Extinct	Found on Aran Islands.
6	Musk Thistle	<i>Carduus nutans</i>	Indeterminate	
7	Dumort	<i>Kixia elatine</i>		Protected species
8	Lesser Snapdragon	<i>Misopates orontium</i>		Protected species
9	Rough Poppy	<i>Papaver hybridum</i>		Protected species



# Agri-environmental schemes

Small tillage plots created for wildlife:

- invertebrate habitat
- food for insectivorous species
- cover for ground-nesting birds
- food for seed-eating birds in winter
- propagation for rare cereal weeds
- propagation of “gene-bank” cereal and other cultivated plant varieties



# Linnet Project



# Trial in 2000

- In Glenveagh National Park
- Based on local knowledge of traditional agriculture and bird populations and literature (mainly UK)
- Own workers, NPWS land
- Cheap (€445 for 2 plots 0.62ha) and successful!



# Where?

- Only on area of low ecological value. Most beneficial in a “sea of grass”. Hedgerows, ditches improve efficiency (increase biodiversity value)

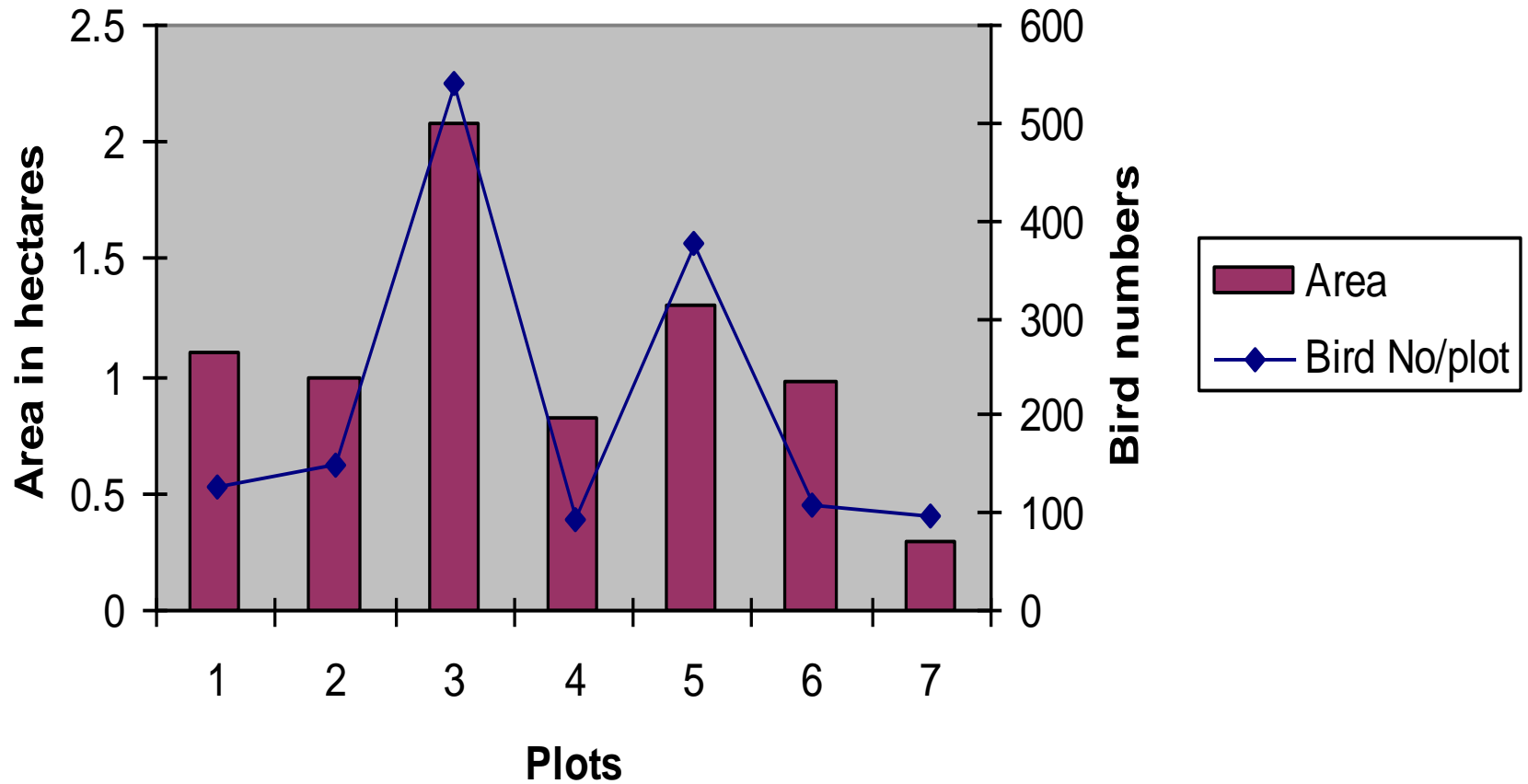


# Size

- Larger the better!!!  
Over 0.5ha but cluster of smaller plots may be equally beneficial.
- Fence off from livestock....



## Correlation between plot size and bird numbers using the plot

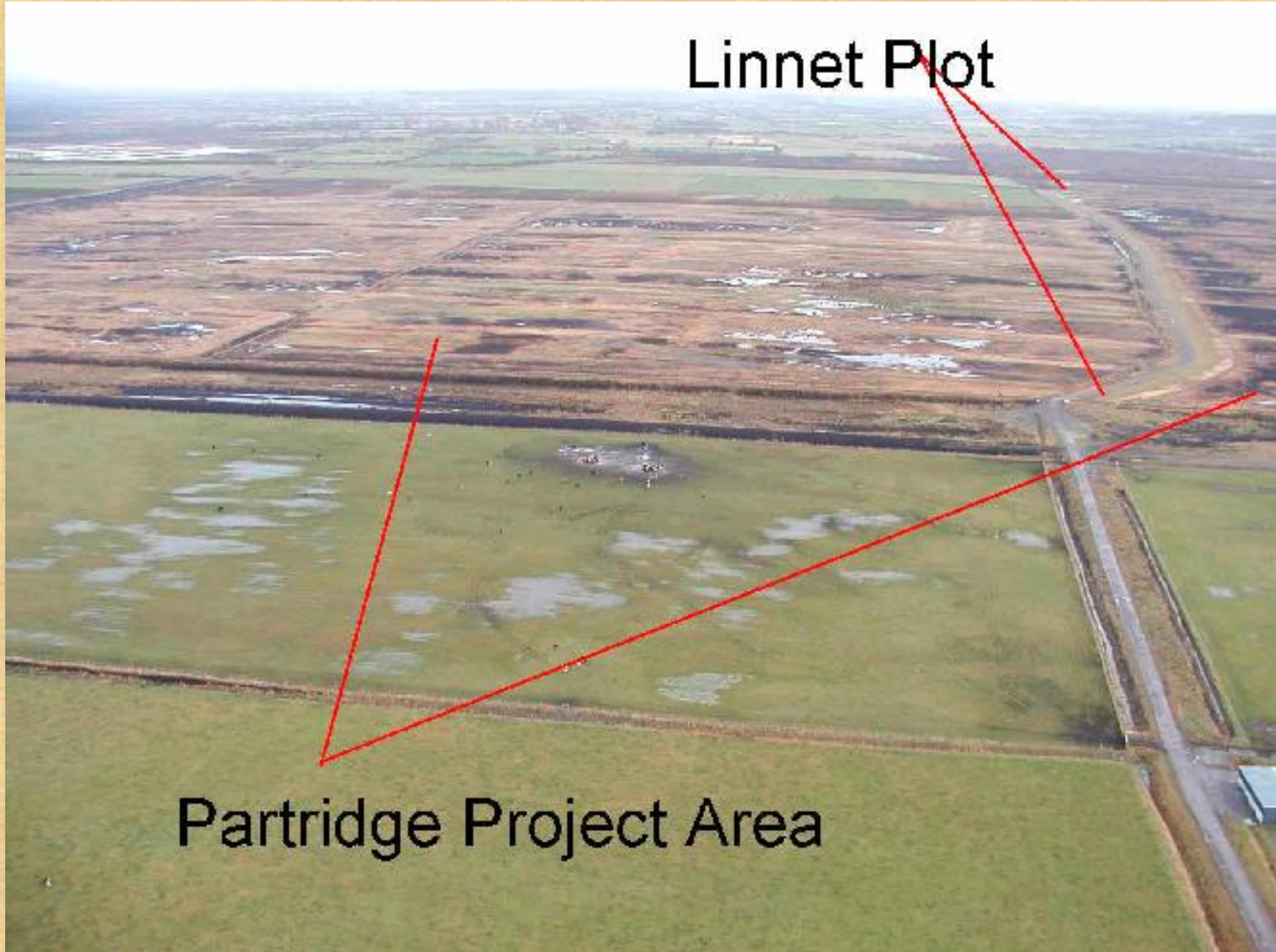


# Landscape

- Plots should be in varied landscape conditions: more potential species to use them.
- Hedges important: cover for birds, connectivity



**Linnet Plot**



**Partridge Project Area**



# How?

- Fertilisers allowed other chemicals not allowed after establishment.
- Sow in May.
- Mixture of seeds (large for Chaffinches, Greenfinches, etc. small seeds for Linnets, Goldfinches).



# What?

- Oats and Linseed mix is the favourite, about 30% less than recommended sowing rate to allow other plants to colonise (60kg Oats/15kg Linseed).



# What?

- Kale is good for insects (Partridge!), seeds in 2nd year and provides cover where no hedges are nearby.
- It is a biennial!



# What? Plants for insects...

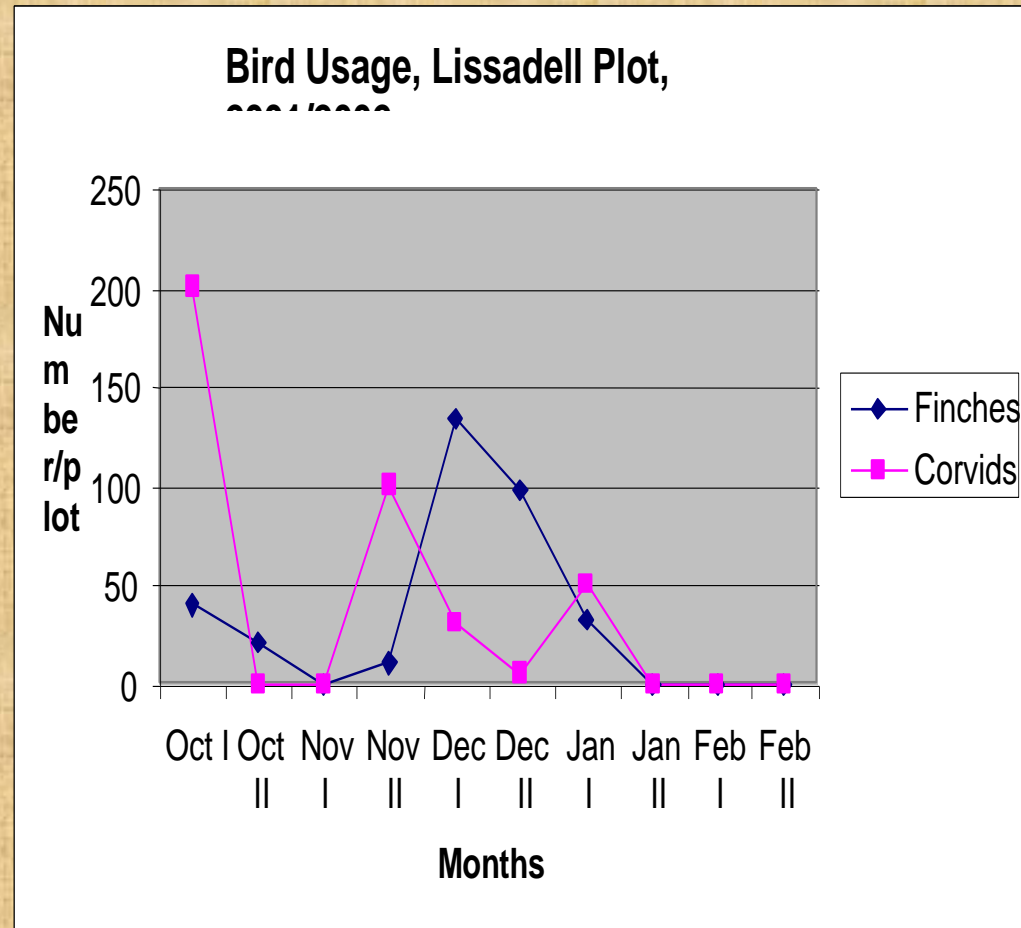


# What not?



# Barley versus Oats

Half of the 0.41ha plot was sown with barley, the other half with oats. Barley ripened by early October, crop was eaten (mostly by corvids) by early November. The oats were ripening in early November, when corvids returned to the plot, but in lesser numbers. The finches were feeding on oats, but by January all seed was consumed as the plot was rather small.



# Vegetation of the plots

- Crop success to be over 50%
- Weediness is acceptable, even desirable! (Twite, Goldfinch eat very small seeds)



# Potential for rare/extinct plants

- Selected plots, in state ownership and managed for nature conservation, are ideal for a rare plant re-introduction scheme.
- Rare/extinct arable weed species which have also attractive flowers, such as Corn Cockle, Cornflower, Corn Chamomile, Rough Poppy are available from specialist seed growers as “wildflower mixes”. These attract insects to the crop
- These mixes should be sewn along the edge of the plot for ease of establishment, to aid monitoring and to allow better view (visual appeal)
- Note: depending on the soil type and the nutrient levels of the soil, the success of the establishment of these wildflower mixes will vary.





# Management of the crop

- Leave it alone!
- Different regimes were tested.  
Linseed provides support for other spp.



# Monitoring

- NPWS staff monitor vegetation, landscape features, bird usage.
- More would be beneficial.



Easy to do and fun!

