



PORTARLINGTON BIODIVERSITY ACTION PLAN, PREPARED SPRING 2014



BIODIVERSITY ACTION PLAN FOR **PORTARLINGTON, CO. LAOIS**

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in association with
**Kearney Consultants
& Trainers Ltd.**

For
LAOIS PARTNERSHIP LTD.

APRIL 2014



Comhshaoil, Pobal agus Rialtas Aitiúil
Environment, Community and Local Government



National Development Plan
Transforming Ireland



The European Agricultural Fund
for Rural Development: Europe
investing in rural areas



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INTRODUCTION

This Biodiversity Action Plan has been created as a joint venture between members of Portarlinton Tidy Towns' Committee and Laois Partnership Ltd. Dr. Fiona Mac Gowan worked with the committee in Spring, 2014 on behalf of the partnership to devise this plan. It followed a series of awareness-raising workshops held in late Spring/early Summer, 2013 in Co. Laois and attended by committee members representing local community interests as well as be concerned individuals.

The Biodiversity Action Plan (BAP) takes account of environmental issues and challenges presenting in Portarlinton at this time and provides a framework to manage biodiversity in the area. While its priorities are currently relevant, it is inevitable that new challenges and issues will develop and the BAP will have to be adapted to cater for these changes.

We recommend regular review of the BAP to take place at the same time that the Tidy Towns' Committee is preparing its annual workplan.



MAIN CONCEPTS

What is Biodiversity?

Biodiversity is the diversity of life, the diversity of all the organisms that occur on Earth – everything from birds to bugs to mammals to trees to reptiles to lichens to fish to mosses to amphibians to algae and everything in between! The term biodiversity includes genetic diversity i.e. the differences within species e.g. the differences from one person to the next.

What is the importance of Biodiversity & Ecology?

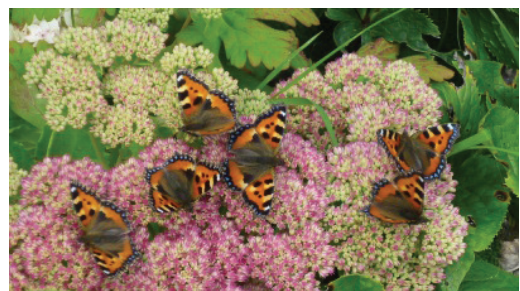
Humans are an integral part of the Biodiversity of Earth and our actions can affect it in both a positive and negative way.

Ecology deals with the inter-
relations between organisms and
the places in which they live

Examples of Biodiversity found in Portarlinton:



Ivy



Small Tortoiseshell butterflies

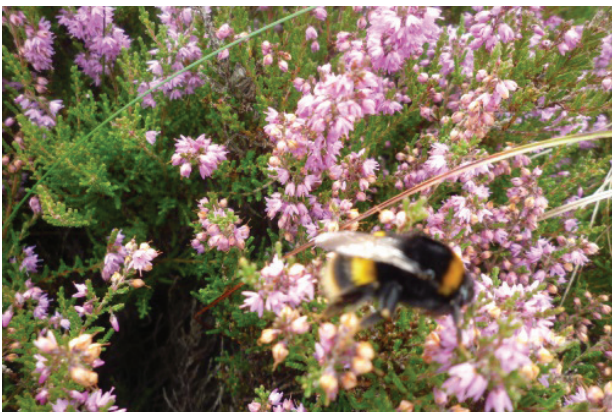


Grey Heron

This can refer to human beings' dealings and interactions with both the habitats and species around them.

So Biodiversity and Ecology affect our lives every day without us even realising it!

A Habitat is the type of area where an organism or a number of organisms is at home



Bees pollinate crops and flowering plants



Hazelnuts—an ecosystem service of the Hazel tree

What is a Biodiversity Action Plan (BAP)?

A BAP is a document which acts as a guide in the management of your local area in the conservation and enhancement of local Biodiversity.

Conservation and enhancement of Biodiversity in your local area has a wide-ranging number of benefits for your local community:

- Increased quality of life – pleasant places to walk or sit down and take a break and/or listen to beautiful birdsong
- Pollination of flowers and crops by insects such as bees
- Pest control e.g. Bats eating biting midges
- An increased number of plants especially trees in an area will lead to cleaner air in the local environment
- Insects, invertebrates, (e.g. worms, slugs and snails) & fungi help breakdown dead and decaying material e.g. make compost and improve soil condition and fertility
- A healthy local environment increases the health and well-being of the locality's citizens
- Impossible to quantify the aesthetic value of a beautiful view or outlook across an area of natural beauty.



Fig. 1: The River Barrow passing through the centre of Portarlinton. The river is part of the River Barrow and Nore Special Area of Conservation (SAC 002162).



WHAT DOES OUR COMMUNITY BAP CONTAIN?

- A written report which documents the Biodiversity highlights of your town/village
- Describes a number of actions that can reasonably be achieved within a set timeframe
- Sets out some goals and aspirations to be achieved by the community



LOCAL CONTEXT

Location Details

Portarlinton is a large town situated in north-east Co. Laois. The river Barrow runs through the town and forms the county boundary with Offaly in certain parts. The aerial image in Fig. 2 below shows the meandering river cutting through the grey of the town which is surrounded by the green of agricultural land and some wooded areas. The agricultural land around the town has a mix of pasture and arable fields. The image shows how the hedgerows and treelines around the town connect up different areas and provide 'nature corridors' which are most important for biodiversity. The built-up areas can also host a variety of habitats from gardens to old walls to groups of trees. This aerial image shows a diversity of habitat type in the general Portarlinton area from pastures to hedgerows to gardens to buildings. The river supports a wealth of biodiversity and is part of the River Barrow and Nore Special Area of Conservation (SAC) which is a designation under the E. U. Habitats Directive. Fig. 3 overleaf is a habitat map of the Portarlinton area, highlighting its habitat diversity and showing the SAC boundaries along the Barrow.



Fig. 2: Recent aerial image of Portarlinton showing the areas of interest (extracted from www.bing.com/maps).

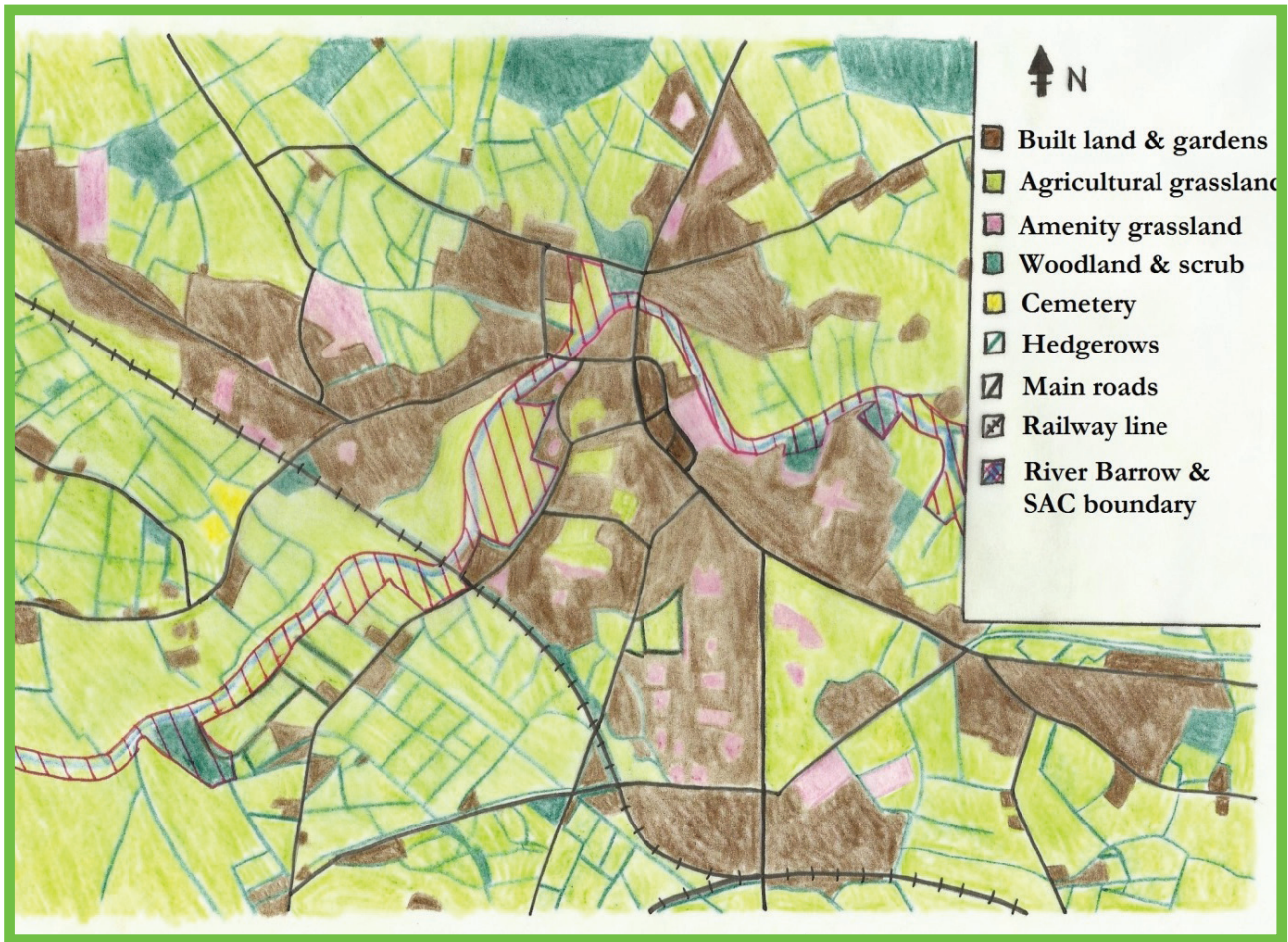


Fig. 3: Habitat map of Portarlington.

Table 1 lists the various habitats of the local area. Many are commonly found and some are of a high biodiversity value. Hedgerows are an example which not only provide food and shelter to wildlife, they also provide the all-important ‘nature corridors’ that facilitate the movement of many species of wildlife from one area to another away from the watchful eyes of predators. The vast majority of hedgerows in Ireland are old and in many cases they are the main reservoirs of native indigenous seed for species of trees, bushes and wildflowers that are best suited to growing in a particular area.

Another very important nature corridor is the River Barrow. Portarlington is in the special position of having this habitat of European conservation importance going right through the centre of the town. The implications of this are important in that any work to be done in or along the banks of the river must be done in consultation with the local National Parks & Wildlife Service (NPWS) staff.

In an urban environment, areas of amenity grassland often provide opportunities to enhance the biodiversity value of the town. Portarlington has many areas of open, public grassland (pink areas in Fig. 3) several of which could host pockets of wildflower meadows or small groups of native trees and shrubs. The Tidy Towns Committee is keen to do some work in various amenity areas and suggestions are outlined in Appendix 1 below.

Walls can also host a wealth of biodiversity in urban areas and Portarlinton is blessed with many beautiful, old stone walls. The native climber Ivy (*Hedera helix*) is very important for biodiversity as it is the only plant to have a profusion of berries in the depth of winter thus making it an important food source for many birds and mammals. Also its thick leaves provide excellent hibernation spots for various insects including butterflies. Ivy naturally belongs in a woodland situation, however, it can cause problems on old buildings and walls where it can damage structures. So ivy needs to be judged on a case by case basis as to whether it is necessary to remove it. Most other plants found on old walls are harmless to the structure and greatly enhance many walls as seen below in Fig. 4

Areas of improved agricultural grassland and arable land are of low biodiversity value because they are generally devoted to a sole crop of grass/cereal and therefore the biodiversity of that habitat is low. However, as mentioned above the hedgerows, ditches and drains that separate these fields are of high biodiversity value.

Code & habitat description (Fossitt 2000)	Corresponding habitat in Fig. 3 above	Biodiversity value in the local area
BL3 Buildings & artificial surfaces	<ul style="list-style-type: none"> • Built land and gardens • Graveyard 	Medium
BL1 Stone walls & other stonework	Built land and gardens	Medium
GA1 Improved agricultural grassland	Agricultural land	Low
BC1 Arable crops	Agricultural land	Low
WL1 Hedgerows	Hedgerow	High
GA2 Amenity grassland	<ul style="list-style-type: none"> • Amenity grassland (public grass areas) • Playing pitches, golf courses (places where grassland would be fertilised/improved) • Cemetery 	Low
WD2 Mixed broadleaved/conifer woodland	Woodland	High
WS1 Scrub	Scrub	High
FW2 Depositing/lowland rivers	River Barrow	High
FW4 Drainage ditches	These are often found at the base of hedgerows	High

Table 1: List of Habitats present in the Portarlinton area (Habitats classified according to Fossitt 2000)



Fig. 4: An old wall featuring several different plant species.



Fig. 5: The Ballymorris bridge on the Portlaoise Rd. This grassy area already features some cowslips which will continue to grow once they are allowed to set seed (i.e. left uncut until they finish flowering). It could also be enhanced with the planting of small groups of native trees.



PROPOSED ACTIONS

This BAP proposes a list of actions achievable through community effort within a timeframe of five years (2014-2018). The practical details of how and where to achieve these aims are described in Appendix 1.

Proposed Actions to improve and maintain biodiversity in the Portarlinton area:

1. Erect bird boxes
2. Erect bat boxes
3. Construct Bug Hotels
4. Plant wildflower meadow
5. Plant native trees & shrubs
6. Gather & sow local, native seed
7. Organise a local Biodiversity Day
8. Change the grass-mowing regime
9. Use natural methods of pest & weed control
10. Bird feeders
11. Leave piles of leaves in quiet corners
12. Biodiversity-friendly hedgerow maintenance
13. Biodiversity data gathering
14. Monitor local area for invasive species



Fig. 6: Aerial view of Portarlinton showing locations of interest and suggested actions. Actions are numbered in white according to the list on the previous page. Locations are identified by white capital letters thus: A. Three open public spaces on the Link Road; B. Green area at Railway Station entrance; C. Ballymorris Bridge green area.

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PROGRESS REVIEW

It is advisable that the actions achieved through this Plan be reviewed annually by Portarlinton Tidy Towns. This will ensure actions are realistically targeted and achieved and will also help in tackling any problems that arise.

APPENDIX 1

Details of recommended actions to maintain, increase and conserve biodiversity in the local area

ACTION	REASON	LOCATION(S)	TIMEFRAME	METHOD
Erect bird boxes	Maintain & increase bird species in the local area	At Ballymorris Bridge; in public spaces where there are trees; in private gardens where the landowner is in agreement. Around school grounds.	<i>Years 1-5</i>	See Appendix 2 below
Erect bat boxes	Maintain & increase bat species in the local area	At Ballymorris Bridge; in public spaces where there are trees; in private gardens where the landowner is in agreement.	<i>Years 1-5</i>	See Appendix 2 below
Construct Bug Hotels	Maintain & increase invertebrate (butterflies; moths; beetles; bees; overflies; ladybirds; woodlice; lacewings etc.) species in the local area. Many of these species are very helpful to us humans through pollination, pest control and detritus removal!	An ideal project for school children to be involved with. Any spot where the public can see them and learn of their importance (e.g. near Ballymorris Bridge). Where possible, a small information sign highlighting the purpose and some of the occupants of the bug hotel would be helpful.	<i>Years 1-5</i>	Free – recycle materials and ask some volunteers to construct. A great project for children as they can use their imagination.
Plant wildflower meadow	Increase both plant and invertebrate biodiversity	Some of the public green spaces will lend themselves to becoming small wildflower meadows. At present the green area at the Railway station entrance features wild cowslips on its sloped area. The flatter parts of this green area could be ideal - see Appendices 4 & 5 for further details.	<i>Once-off action within the 5 year timeframe, preferably early on in order to enjoy the beautiful results sooner!</i>	The topsoil and turf layer will need to be stripped but once planted a wildflower meadow requires very little maintenance, just 2 mowings a year, first in early spring and the final cut in July or August or September, once the seed has had time to develop and scatter. In-depth instructions for planting are available at the Laois company 'Design by Nature' website. They will also prepare seed mixes suitable to different areas.

ACTION	REASON	LOCATION(S)	TIMEFRAME	METHOD
Plant native trees & shrubs	Everyone loves trees! Ensuring the plants are indigenous species from native stock ensures both biodiversity value and plant disease influx (think of Ash dieback disease!)	<ul style="list-style-type: none"> • Link Rd green areas. • Public green areas. • Green area at Ballymorris Bridge. • Any open grass areas where trees would not impair drivers' sight lines. 	<i>Once-off action within the 5 year timeframe.</i>	Free if next action is followed! <ul style="list-style-type: none"> • Groups of trees are preferable to single trees. • Do not use herbicides, use tree tubes as an
Gather & sow local, native seed	Everyone loves trees! Ensuring the plants are indigenous species from native stock ensures both biodiversity value and control of plant disease spread.		<i>Years 1-5</i>	Free if compost & pots are donated – old paper-based milk cartons work well
Organise a local Biodiversity Day	To increase local awareness of the importance of biodiversity. This can also result in recruitment of more local volunteers		<i>A once-off event, however, sometimes they prove popular with the local community and turn into annual events!</i>	Ideas and guidelines can be obtained from the National Biodiversity Data Centre (www.biodiversityireland.ie)
Change the grass-mowing regime	This encourages biodiversity e.g. allowing the cowslip to flower and more importantly set seed.	Any of the areas of open grassland around the town.	<i>Every year</i>	No extra cost. Just delaying the first cut of the year by even 2 weeks can help wildflowers to set seed or as is often seen mowing around the cowslips and leaving them uncut results in more pretty flowers in subsequent years.
Use natural methods of pest & weed control	Pesticides & herbicides decrease biodiversity and leave residual chemicals in the soil which continue to reduce biodiversity into the future. Also they can be lethal for predators (e.g. Barn Owls) who ingest large doses through their prey (rats & mice).	Various different methods of natural pest control have been found to be successful. Encouraging natural methods of pest control throughout an area especially amongst private gardens would greatly increase the local area's biodiversity.	<i>Every year</i>	Most methods are free but require manual labour e.g. weeding by hand.
Bird feeders	Help increase bird numbers	Install bird feeders where people can watch from a distance e.g. outside classroom windows; in graveyards and community car parks where they can be seen from the benches.	<i>Years 1-5</i>	Free if voluntary labour and recycled materials are used. See www.rspb.org.uk and www.birdwatchireland.ie for designs.

ACTION	REASON	LOCATION(S)	TIMEFRAME	METHOD
Leave piles of leaves in quiet corners	For hibernating hedgehogs. The resulting leaves can be used as a mulch the following spring, when hibernating hedgehogs have awoken, by whoever needs it.	Dark, quiet corners of public areas e.g. at the end of a hedgerow where there won't be any disturbance.	<i>Every year</i>	Free
Hedgerow maintenance	When hedgerows are maintained properly, e.g. cut once every three years, they produce maximum crops of flowers and fruit which are not only aesthetically pleasing to the eye but are also highly important for pollinating and feeding wildlife.		<i>Every year</i>	See Appendix 4 below for maintenance details.
Biodiversity data gathering	Taking care with what species are planted is very important for maintaining & enhancing bee and other pollinator species populations.	Anywhere in the Portarlinton area especially places with most diverse habitats e.g. the Wildlife garden & hedgerows. Private gardens are also great.	<i>Every year. Anyone with an interest can take part from children to grown-ups of all ages</i>	This year as part of Abbeyleix's Tidy Town's Sustainable Plan window boxes will be planted with perennial herbs e.g. Parsley, Sage, Rosemary, Thyme, Mint, Coriander & Borage (known as Incredible Edibles) and pollinator friendly flowering plants: Phlox, Nepeta, Penstemon, & Papaver.
Monitor local area for invasive species	Damaging invasive species are an increasing problem for Ireland's native biodiversity	Anywhere in the local area.	<i>Every year. Anyone with an interest.</i>	See Appendix 6 for further details.



Fig. 5: Example of a 'Bug Hotel' in Killenard re-using various materials.



Fig. 7: Trees in public spaces such as on the Link Road below are ideal for hanging bird feeders as people can watch from a short distance and enjoy the local bird life.



Fig. 8: This open area at the back of Portarlington House on Link Road could be enhanced with the planting of native trees such as Rowan, Guelder rose and Spindle which all feature colourful flowers and berries.



Fig. 9: Cowslips flowering at the Railway Station entrance. The flat areas around this slope could be developed as a small wildflower meadow and planted with a few native trees ensuring year-round interest.

APPENDIX 2

Bird & bat boxes

(a) Bird boxes

- There are many different sets of instructions for bird box construction on the internet. The best examples are available from the Irish bird charity Birdwatch Ireland (www.birdwatchireland.ie) and the British bird charity the RSBP (www.rsbp.org.uk). Both websites contain detailed instructions for making birdboxes and where to site them. The most important points to remember when positioning birdboxes are set out below:
- Ensure there is a clear flight path to the entrance of the bird box.
- Tilt the box forward slightly thus ensuring any heavy rain will hit the roof and bounce off rather than enter the box via the entrance hole/slit.
- Autumn is the best time to erect boxes as birds seek shelter in autumn and winter. Birds will often use the same box for nesting then the following spring.



Fig. 10: An example of a bat box on the east wall of St. Patrick's Hall, Ballacolla, Co. Laois

(b) Bird boxes

- Ireland hosts nine different species of bat, two of which were only discovered in Ireland in recent years. These mammals are fascinating creatures who have unfortunately suffered from several myths associated with them. For instance:
- Irish bats do not suck blood! They are insectivores feeding exclusively on insects especially midges who do suck our blood and cause general annoyance on damp summer evenings. One bat can eat 5000 midges per night providing us humans with a great ecosystem service!
- Bats are not like flying mice. Unlike mice, bats give birth to just one baby bat each summer. This means they are very susceptible to population drops when bad luck such as a bad summer weather results in not enough food or warmth to keep that baby alive.
- Bats are not blind. They are active at night in the summer and they navigate and catch their food using a form of sonar known as echolocation. This is a fascinating process where the bats make very high pitched squeaks and listen for the echoes which bounce off obstacles or potential prey. The bats can use these echoes to determine a huge amount of information about what is around them in the dark. These squeaks are too high-pitched for human ears so machines known as 'bat detectors' are used to listen in to these calls and thus determine what species of bats are present.
- Bat Conservation Ireland is a charity which works to spread the fascinating story of Irish bats through education and conservation. They can be contacted at their website (www.batconservationireland.org) which also contains lots more information. Their recommendations for building a bat box can be found on their website (Bat Conservation

APPENDIX 3

Recommended species for planting

(a) Hedges

Using the local hedgerows as the cue for which species to plant, the following are recommended:

- Hawthorn/Whitethorn (*Crataegus monogyna*) – this should be the dominant species
- Elder (*Sambucus nigra*)
- Blackthorn (*Prunus spinosa*)
- Hazel (*Corylus avellana*)
- Holly (*Ilex aquifolium*)
- Privet (*Ligustrum vulgare*)
- Spindle (*Euonymus europaeus*)
- Guelder rose (*Viburnum opulus*)

Several Ash (*Fraxinus excelsior*) and Oak (*Quercus robur*) trees should also be planted along the hedges. It is very important that all the plants are sourced in Ireland and locally if at all possible as this ensures the plants will be adapted to the local conditions and the genetic make-up of local native plants will not be disturbed. A method of ensuring this would be to collect seed from local plants and grow them for planting. This is not always practical as it would mean the hedge could not be planted for several years. However, this method could be used particularly in the collection of local Ash and Oak seed and it would make an ideal project for local schoolchildren to become involved in.

(b) Wildlife-friendly tree species

- Pedunculate Oak (*Quercus robur*) – prefers neutral/limestone soils
- Sessile Oak (*Quercus petraea*) – prefers slightly acid soils
- Willow (*Salix spp*) – good for damp/ waterside conditions
- Hazel (*Corylus avellana*)
- Alder (*Alnus glutinosa*) – good for damp/ waterside conditions
- Aspen (*Populus tremula*)
- Silver birch (*Betula pendula*)
- Downy birch (*Betula pubescens*)
- Yew (*Taxus baccata*)
- Holly (*Ilex aquifolium*)
- Ash (*Fraxinus excelsior*)
- Rowan/Mountain ash (*Sorbus aucuparia*)
- Whitebeam (*Sorbus aria*)
- Crab apple (*Malus sylvestris*)
- Wild cherry (*Prunus avium*)

(c) Wildlife-friendly shrub species

- Ling heather (*Calluna vulgaris*) - prefers acid/peaty soil conditions
- Bell heather (*Erica cinerea*) - prefers acid/peaty soil conditions
- Cotoneaster (*Cotoneaster horizontalis*)*
- Honeysuckle/Woodbine (*Lonicera periclymenum*) – a climber.
- Dog rose (*Rosa canina*) – a climber.
- Rugose rose (*Rosa rugosa*)*
- Buddleia (*Buddleia davidii*)*
- Elder (*Sambucus nigra*)
- Spindle tree (*Euonymus europaeus*)
- Blackthorn (*Prunus spinosa*)
- Purging Buckthorn (*Rhamnus catharticus*)
- Alder-buckthorn (*Frangula alnus*)
- Privet (*Ligustrum vulgare*)
- Guelder rose (*Viburnum opulus*)
- Gorse (*Ulex europaeus*)

*indicates a species not native to Ireland but non-invasive and wildlife friendly

(d) Wildlife-friendly herbaceous species (avoid F1 hybrids as these are sterile i.e. have no pollen and therefore no use to many insects)

- Yarrow (*Achillea millefolium*)
- Ornamental Daisies (*Aster spp*)*
- Marigold (*Calendula officinalis*)*
- Poppy (*Eschscholzia spp*)*
- Sunflowers*
- Lovage (*Levisticum officinale*)*
- Baby blue eyes (*Nemophila menziesii*)*
- Thyme (*Thymus praecox*)
- Lavender (*Lavandula*)*
- Honesty*
- Snapdragon (*Antirrhinum*)*
- Cosmos*
- Globe thistle (*Echinops*)*
- Forgetmenot (*Myosotis spp*)
- Evening primrose (*Oenothera*)*
- Selfheal (*Prunella vulgaris*)
- Sedum*

*indicates a species not native to Ireland but non-invasive and wildlife friendly

APPENDIX 4

Hedgerow Maintenance Tips*

*Adapted from Galway County Council Biodiversity guidelines (see: www.galway.ie/biodiversityguidelines) and those of The Hedge Laying Association of Ireland (see: www.hedgelaying.ie)

- With certain exemptions (NOT including local community groups) the Wildlife Amendment Act (2000) prohibits the cutting of hedges during the period 1st March to 31st August (inclusive)
- Where necessary, trim or lay while dormant, from the beginning of September to the end of February
- To keep the base dense, trim hedges so that they are wider at the base and narrower at the top
- Hedges that are trimmed every year produce much less flowers and fruit than those cut less frequently. It is recommended that a length of hedge be cut once every three years. This could be done either by leaving a whole length of hedge uncut for three years or the usual method is cut one length in Year A, the next length in Year B, the next length in Year C and then it's back to the length that was cut in Year A and the process continues.
- Trimming hedges once every three years results in maximum flowering and fruiting of the shrubs in the hedges. Not only does this result in a more aesthetically pleasing hedgerow but it also makes for a hedge that will increase biodiversity locally as its fruit and flowers feed a wide diversity of local wildlife from bees to birds to mammals as well as the odd foraging human!
- Avoid the use of herbicides in general but especially within 1.5m of hedge.
- Store grass clippings away from the base of hedgerows. Grass clippings are often seen thrown in ditches around the country. This is not good environmental practice as the rotting grass prevents other plants from growing resulting in ugly, bare patches with poor biodiversity.

APPENDIX 5

Various Habitats' Management Regimes*

*Adapted from Galway County Council Biodiversity guidelines (see: www.galway.ie/biodiversityguidelines)

Grassland areas & road verges

- Leave grass in verges on the outskirts of your town/village less tightly mown
- Do not use herbicides or fungicides.
- Grass clippings need to be removed to an appropriate area for composting, not to a nearby ditch, where their rotting will actually burn and kill off the plants underneath leaving an ugly, unsightly patch.
- Leave areas for wildflowers, nettles etc. in quiet corners. Nettles are vital for over 40 species of insect including the caterpillars of the beautiful Peacock butterfly
- Reduce mowing regime, in order to encourage wildflowers to flower and set seed. It is very important to leave mowing till after the wildflowers have finished flowering and their seed has dispersed otherwise they could disappear from an area altogether. Did you ever wonder why there are less cowslips and primroses now than there was in the past? Cowslips are actually doing well on motorway verges as these are only occasionally mown. Toghher roundabout, outside Portlaoise at Exit 17 of the M7 motorway is a wonderful example with a huge patch of cowslips flowering every year on its western side.



Fig. 11: The Cowslip (*Primula veris*)

Gardens, school grounds & open grassy areas and flower beds

- Try to plant native species of flowers, grass and trees which are best suited to your soil and landscape and local wildlife (see Appendix 2 for recommended list).
- Use only plants and seeds that have been grown in Ireland and if possible from your local area. Seed gathering projects could be organised in conjunction with local schools. Wildflower mixes are often seen for sale in shops and garden centres but most of these are not Irish so using these seed mixes can lead to the introduction of exotic and possibly invasive species. Another side effect is even if the species of plants in the seed mixes are the same as local wildflowers they will have different genetic make-up and if the foreign and native seeds interbreed then the strengths of the native seed source will be diluted. See www.wildflowers.ie for appropriate seed mixes and view videos on how to sow them.
- Avoid planting invasive exotic species such as Japanese knotweed, Himalayan balsam, Giant rhubarb (*Gunnera*) or Rhododendron. If you prune or remove invasive plants or clear excess oxygenating plants from your pond, compost or burn them to make sure they cannot invade nearby land or waterways.
- Aim for a mixture of species of plants to appeal to a range of animals i.e. flowers and herbs, shrubs and trees.
- Choose plants which are rich in nectar and pollen to attract insects (see Appendix 2).
- Choose plants with plenty of berries and seeds to provide food for birds (see Appendix 2).
- When planting/landscaping open areas, make a few different areas such as stone walls, log/wood piles, a hedge, flower area for nectar and pollen and very importantly a pond/area of open water. The latter provides drinking water for wildlife as well as habitat for other wildlife species such as frogs and dragonflies.
- Where you have birdfeeders ensure they are cleaned regularly as old food and dirt at feeders can be lethal to small birds. Also make sure your feeder is placed where cats cannot access it.
- Piles of leaves in quiet spots provide hibernating spaces for hedgehogs.
- Piles of logs and sticks of different sizes will attract all sorts of insects and small animals. Fill the gaps with moss and old leaves which are food for hedgehogs, birds and other animals.
- Bundles of twigs or straws provide nesting and hibernation spots for a range of insects including ladybirds and bumble bees.
- Where possible use peat free compost or at least peat-reduced compost. Better still make your own! For best results, get some good advice about composting before you start. The Laois Environment Awareness Officer Ann Marie Kelly runs Compost making clinics to help communities get started. She can be contacted at 057 8674331.
- Slug pellets and weed killer are very harmful to birds and hedgehogs. Try to use natural methods of pest and weed control.

APPENDIX 6

Invasive species identification, monitoring & control

In recent years several invasive species have been causing serious environmental problems in different parts of Ireland. Many of the problematic species are plants which originally would have been brought in to Ireland as exotic garden plants. The problems start when these species escape to the wild and take over, pushing out the native species in the process. A well-known example is *Rhododendron ponticum* which invades bogs and woodlands to the detriment of the native Irish flora and fauna – the evergreen shrub shades out the woodland flowers and herbs and they disappear in a few short years. An animal example is the American mink (*Mustela vison*). Mink were bred on mink farms for their furs for many years but then as the demand for furs declined many animals escaped or were released into the wild. Mink feed on other small mammals and birds, so in the wild they prey on native wildlife species to the detriment of Irish biodiversity.

In the Portarlington area there are three main invasive species to be monitored:

- Grey squirrel
- American mink
- Japanese knotweed

Information sheets on these three species are supplied with this report. These sheets aid in the identification of the species and give instructions on what to do if they are recorded. The sheets are published by the National Biodiversity Centre and copies of the sheets and lots of other information are available at: www.invasives.biodiversityireland.ie

APPENDIX 7

Helpful Reading Material

- Aalen, F.H.A.; Whelan, K. & Stout, M. (eds.) (1997). *Atlas of the Irish Rural Landscape*. Cork University Press, Cork.
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- Mitchell, F. & Ryan, M. (1997). *Reading the Irish Landscape*. Town House, Dublin.
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- Parnell, J. & Curtis, T. (2012). *Webb's An Irish Flora*. Cork University Press, Cork.
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- Tubridy, M. & Associates. (2010). Laois Habitats Survey. Report prepared for Laois Heritage Forum, County Hall, Portlaoise.

APPENDIX 8

Helpful Contacts, Organisations & Websites of Interest

- Laois County Council Heritage Officer: Catherine Casey, tel. 057 8664129
- Laois Co. Co. Environment Awareness Officer, tel 057 8664000
- National Parks & Wildlife Service District Conservation Officer for Laois: tel. 076 1002590
- Abbeyleix Bog Project: www.abbeyleixbog.ie
- An Taisce: www.antisce.ie
- Bat Conservation Ireland: www.batconservationireland.org
- Biodiversity public awareness website: www.noticenature.ie
- Birdwatch Ireland: www.birdwatchireland.ie
- Laois branch of Birdwatch: www.facebook.com/pages/Birdwatch-Laois
- Bord na Mona: www.bordnamona.ie
- Botanical Society of Britain and Ireland: www.bsbi.org.uk
- Coillte: www.coillte.ie
- Coillte's raised bog restoration project: www.raisedbogrestoration.ie
- Conservation Volunteers: www.conservationvolunteers.ie
- Crann: www.crann.ie
- Design by Nature, native Irish wildflower seed mixes: www.wildflowers.ie
- Dragonfly Ireland: www.habitas.org.uk/dragonflyireland
- Heritage Council: www.heritagecouncil.ie
- Irish Peatland Conservation Council: www.ipcc.ie
- Irish Seed Savers: www.irishseedsavers.ie
- Irish Wildlife Trust: www.iwt.ie
- Laois/Offaly branch: www.facebook.com/pages/Irish-Wildlife-Trust-LaoisOffaly-Branch
- Laois County Council, Heritage Office: <http://www.laois.ie/LeisureandCulture/Heritage/>
- Lichens: www.lichens.ie
- Lough Boora Parklands: www.loughbooraparklands.ie
- National Biodiversity Data Centre: www.biodiversityireland.ie
- National Parks & Wildlife: www.npws.ie
- The Ordnance Survey of Ireland: www.osi.ie/mapviewer
- Wildflowers of Ireland: www.irishwildflowers.ie

APPENDIX 9

Biodiversity & Ecology Definitions & Explanations

1. Biodiversity= the diversity of life

The diversity of all the organisms that occur on Earth – everything from birds to bugs to mammals to trees to reptiles to lichens to fish to mosses to amphibians to algae.....

Biodiversity includes the diversity of:

- Individuals within a species (genetic diversity) i.e. you and me!
- Species within an ecosystem or habitat (species diversity) i.e. me and the spider on that wall!
- Ecosystems or habitats (habitat diversity) i.e. this building we're in and the fields outside.

2. Ecology = The branch of Biology that deals with the relations of organisms (living things) to one another and to their physical surroundings.

3. What is the importance of Biodiversity and Ecology?

- Humans are an integral part of the Biodiversity of Earth and our actions can influence it in both a positive and negative way.
- Ecology deals with the inter-relations between organisms and the places in which they live. This can refer to human beings' dealings and interactions with both the habitats and species around them.

So Biodiversity and Ecology affects our lives every day without us even realising it!

3. Species = a type of living organism

- Members of the same species can interbreed
- All species have common names and scientific names (in Latin) e.g. *Homo sapiens*

4. Habitat = simply means the home environment of an organism or a number of organisms

- Some species only found in one type of habitat e.g. a whale only found in the sea
- Some species are found in a few habitats e.g. some grass species found in both open fields and woodlands

5. Ecosystem = a community of organisms all interacting with each other

Complex – it involves all sorts of different species and different groups of species e.g. in a woodland it includes: the birds nesting in the trees; the lichens living on the trees; the tree leaves rotting on the ground and the fungi living on them; the insects living in the trees (and the birds!) etc.....

6. Ecosystem Services = all benefits humans receive from ecosystems