Submission on draft of

Ireland's 4th National Biodiversity Action Plan

By The Dublin Naturalists' Field Club

Ireland has had three National Biodiversity Actions Plans, the first in 2002 and the most recent for the period 2017–2021. These plans have been theoretically incorporated into various Local Biodiversity Action Plans. Collectively, however, they have failed to understand or address the drivers of biodiversity decline and the ongoing loss of species, habitats and ecosystems. How has this situation come about? It is evident that at both local and national level the term "biodiversity" is considered to be an abstract concept, whose true characteristics have not been fully appreciated or understood. While there has been an understandable focus on climate change most significant habitat and species loss in Ireland is a result of other more immediate pressures whose effects can be offset by actions which are within our control.

In the view of The Dublin Naturalists' Field Club (DNFC) these actions should be the primary focus and objective of the 4th National Biodiversity Action Plan. It should be honest and objective as to why all three of the preceding Action Plans have been limited in implementation and success. Stark evidence of this is to be found in the periodic reports by the Irish Government to the European Union on the 'Status of EU Protected Habitats and Species in Ireland'. The third such report was published in 2019. In summary, it reported that only 15% of the 59 Habitats Directive Annex I habitat types included were in a favourable condition; 46% were judged to be inadequate; and 39% were deemed to be in a bad condition. In addition, of the 60 Habitats Directive Annex II-listed species assessed, 57% were claimed to be in a favourable condition; 15% inadequate; 15% were in a bad condition while the status of 13% was unknown. These reports relate solely to our national failure to protect legally designated Natura 2000 habitats and species, but **current field evidence indicates that the general decline in biodiversity is far in excess of these figures**.

The decline is not captured in the present draft, either in substance or in presentation. Why, if the wish is to raise public awareness of the challenges and build cross-sectoral support for change is an honest account of the current situation avoided? Why are all the photographs pretty pictures? Where are the photographs that highlight the reality of biodiversity loss in today's Ireland? Where is the poisoned raptor, the uprooted hedgerow, the drained wetlands, the overgrazed and burnt uplands and the damage caused to native habitats by invasive pests and diseases. Biodiversity loss is not a pretty picture, and the presentation of this report is a disservice to its objective and a missed opportunity to illustrate why these actions are so important.

Why in particular cannot the language used in this report and the targets, actions and indicators be more definitive rather than passive and aspirational? This is the fourth such report and many of these actions have apparently been tried before or are a continuation of ongoing processes. There are surely sufficient findings over the past twenty years to allow for much more tangible targeting and quantitative measurement of success. It is disheartening to see so many references to improving understanding, further assessments, more reports and an ever-increasing number of engagements presented as tangible outcomes. Many of these actions, while laudable, are unlikely to result in real change. Could specific priority and attention not be given to those actions across the themes that are **essential** to halting and reversing biodiversity loss in Ireland?

Some of these are, in our opinion, much more important and key to achieving the ambitious vision for biodiversity in Ireland by 2050.

Biodiversity Loss

The principal reasons for biodiversity loss in Ireland arise from human activities. These include agricultural intensification, arterial and field drainage, afforestation, resource extraction and commercial, industrial, recreational and residential development, and poorly-informed landscape management.

Conservation of natural habitats and their indigenous flora, fauna and fungi is paramount in addressing biodiversity loss. Yet, they have suffered widespread destruction and damage. There has been an entrenched failure on the part of the State to scientifically monitor and enforce conservation legislation for sites of high nature value. The provisions of the legislation in some cases are inadequate, and many sites of high nature conservation value are not legally recognised or designated for conservation. This has led to the destruction and degradation of many parts of the countryside which were formerly rich in biodiversity and of ecological and scientific importance.

Many species which were once widespread in Ireland are now rare due to loss of habitat, and they are threatened with extinction, locally or regionally. The distribution of these rare and declining native plant and animal species follows biogeographical patterns and depends on particular combinations of environmental conditions, such as geology, soil type, climate and water; these cannot be recreated once lost.

At one stage, especially toward the end of the nineteenth century, Ireland was a well-explored island botanically, and the flora was one of the best known in Europe. The researches and scholarship of those who created that body of data and knowledge is now sadly lost to many. There is little in the plan to suggest that any serious measure of recognition has been afforded to the content, significance and lineage of these researches.

A case in point is the lack of reference in the Action Plan to the contribution or importance of a number of key expert field organisations, in particular the Botanical Society of Britain and Ireland (BSBI). This is a serious omission given that the BSBI vice county recorder system as well as its general membership provide much of the historical and contemporary data which contribute to the designation of habitats for protection in Ireland. A snapshot of a version of the present Ireland in the Action Plan without due reference to the significance of this body of investigation is hard to fathom, since it provides the benchmark for the steady depletion of our flora, and supporting habitat systems.

There are many instances where high-quality wetlands, with correspondingly high nature conservation value, have been afforested by both commercially-driven conifer and broad leaf plantings, thus casually destroying habitats and their associated rare species which have taken many years to form. Flooding drains with excess fertiliser runoff promotes the growth of nutrient responsive heavy vegetation, thus outcompeting smaller and less robust species. There are many instances where species have been totally eliminated from large tracts of the natural landscape, but little evidence compiled to track and evaluate the consequences of the original actions and their financial drivers. Because presenters, proponents and advocates are not challenged (when disguising the real consequences of their actions), by the various officials who are in a position to so do, it begs the question as to why this tolerance is allowed to continue.

It is our view that the distinct character and floristic components of these sites and their associated invertebrate fauna, provide direct evidence of the continuity of unusual habitat conditions, and that these should be respected and protected **for their own sake**, as living evidence of what has gone before as it struggles to maintain itself in an ever-diminishing number of sites. The essential fragility of these sites is constantly challenged, and their habitat characteristics cannot be replaced or duplicated. Various greenwash initiatives tend to obscure the true character of these threats, by the

deployment and offerings of inexpensive sops. Sadly, some of these interventions seem sufficient to dispel the objections and unease of a number of local concerned conservationists. Many of these observers, sometimes operating as concerned individuals, are often unable to access the relevant knowledge at a level sufficient to challenge the proponents of these measures. Others are uncomfortable with reporting habitat damage caused by their neighbours. That is the essence and challenge of habitat conservation. It is imperative to safeguard these important self-sustaining sites, which are increasingly surrounded by a hostile neighbouring environment, whose present character is driven by price-support mechanisms, by larger infrastructural developments and the inability to value these rare components of our indigenous natural heritage. Without this very necessary knowledge, local and national objections cannot be mobilised to good effect. **This underpins the necessity for a properly-constructed national inventory of sites of high nature conservation value with which to promote an understanding of our surviving flora, fauna and habitats.** Further details are set out in Appendix 1.

Unfortunately, there is growing level of misinformation around biodiversity, with often well-meaning but misdirected initiatives based upon or leading to false assumptions that are all-too readily accepted by an inexpert public and an unquestioning media. We have a particular concern that a number of the proposals contained in the draft Action Plan are liable to advance this false-agenda/narrative if not more carefully considered or managed. We would like the draft Action Plan to include specific commitments to combat such misinformation, in particular to progress the gathering of evidence at a site-specific level and to identify and communicate the immediate causes of these habitat losses and how they can be addressed. This is especially the case where these may be influenced by a variety of State or local government financed incentives.

State Bodies

Yes, a multifaceted approach is needed in order to attempt to salvage Ireland's damaged biodiversity. We agree that all sectors, agencies, interests and the general public should co-operate and have a common vision and common objectives for what needs to be done. In our view, this first and foremost requires an empowered **National Parks and Wildlife Service** (NPWS) that can give leadership and operate in a fully effective manner. A recent review of the NPWS concluded that there were major strategic, structural, capacity and resource issues, and that it is not capable of meeting its current demands or delivering on its mandate.

The fourth National Biodiversity Action Plan needs to empower the NPWS to scrutinise the proposed actions of both the public and private sectors and to audit the outcomes of actions initiated by them. Currently the NPWS appears to be very constricted in its enforcement powers and has not developed a constructive relationship with the expert biological community. Under the Fourth Action Plan DNFC wants to see a restructured NPWS, as an empowered, efficient and effective organisation with an enforceable mandate. We advocate the creation of an effective, independent, oversight body with executive legal powers that would audit and evaluate the performance of the NPWS in fulfilling its remit and make recommendations to enhance its performance.

This is necessary to address, amongst other matters, the serious issues relating to the conservation status of our legally designated Natura 2000 sites. Under Article 11 of the Habitats Directive, each member state is obliged to undertake surveillance of the conservation status of the natural habitats and species in the Annexes and under Article 17, to report to the European Commission every six years on their status and on the implementation of the measures taken under the Directive. Despite the requirement to undertake surveillance, for the last round of reporting, most of the annexed habitats were not field-surveyed: only twenty-six habitat types (43%) were assessed for structural and functional condition using a complete survey or a statistically robust estimate, 23 habitat

condition assessments were based mainly on extrapolation from a limited amount of data and 10 habitat condition assessments were based mainly on expert opinion with very limited data.

Table 1. Methods used for assessing habitat condition in The Status of EU Protected Habitats and Species in Ireland Report 2019.

Method	Complete survey or a statistically robust estimate	Based mainly on extrapolation from a limited amount of data	Based mainly on expert opinion with very limited data
Habitat Type	1110 Sandbanks 1130 Estuaries 1140 Tidal mudflats and sandflats 1150 Lagoons* 1160 Large shallow inlets and bays 1220 Perennial vegetation of stony banks (Vegetated shingle) 1310 *Salicornia* mud 1330 Atlantic salt meadows 1410 Mediterranean salt meadows 1420 Halophilous scrub 2120 Marram dunes (white dunes) 2140 Decalcified *Empetrum* dunes* 2150 Decalcified dune heath* 2170 Dunes with creeping willow 3270 *Chenopodion rubri* 5130 Juniper scrub 6130 Calaminarian grassland 6210 Calcareous grassland (*orchid-rich) 6410 *Molinia* meadows 6510 Lowland hay meadows 7110 Active raised bog* 7120 Degraded raised bog 91A0 Old oak woodland 91D0 Bog woodland* 91E0 Alluvial woodland* 91J0 Yew woodland*	1170 Reefs 1180 Submarine structures made by leaking gases 1210 Drift lines 1230 Vegetated Sea cliffs 2110 Embryonic shifting dunes 2130 Fixed dunes (grey dunes)* 2190 Dune slacks 21A0 Machair* 3110 Oligotrophic isoetid lake habitat 3130 Mixed *Najas flexilis* lake habitat 3140 Hard-water lake habitat 3160 Acid oligotrophic lake habitat 4010 Wet heath 4030 Dry heath 4060 Alpine and subalpine heath 6230 Species-rich *Nardus* upland grasslands* 6430 Hydrophilous tall-herb swamp 7130 Blanket bog (*active) 7150 *Rhynchosporion* depressions 7220 Petrifying springs* 8110 Siliceous scree 8220 Siliceous rocky slopes 8240 Limestone pavement*	3150 Rich pondweed lake habitat 3180 Turloughs* 3260 Vegetation of flowing waters 7140 Transition mires 7210 *Cladium* fens* 7230 Alkaline fens 8120 Calcareous scree 8210 Calcareous rocky slopes 8310 Caves 8330 Sea caves

The degradation and poor management of these sites is well known, but despite the identification of measures needed for conservation, overall habitat quality remains low. For example, only five habitat types which had conservation measures identified and taken had favourable status. Habitat status for the remaining 33 habitats were reported as either inadequate (17) or bad (16). Of the 16 habitat types with measures identified, but none yet taken, eight were reported as inadequate and seven as bad with only one habitat type having favourable status. Addressing these and related matters should feature prominently in the National Biodiversity Action Plan. It is a matter of great concern that these habitat types of high nature conservation value are scarcely mentioned in the present draft.

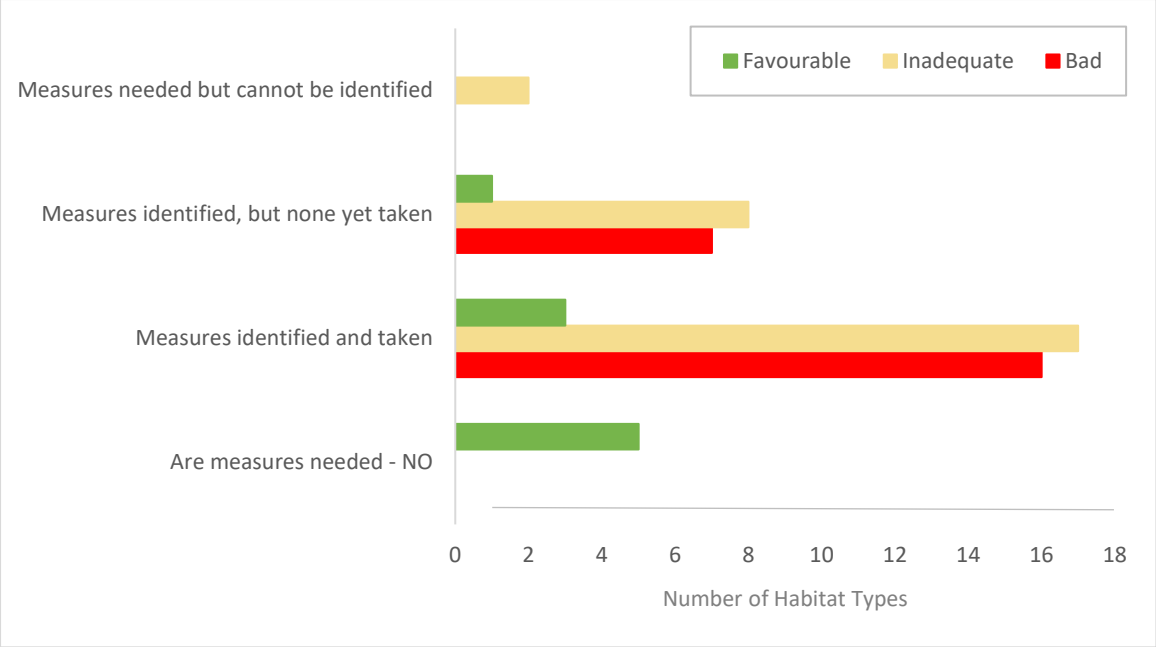

Figure 1. The Status of EU Protected Habitats and Species in Ireland 2019 conservation measures and habitat assessment status.

Our **Local Authorities** have various responsibilities which directly impact on the environment, including the preparation of County Development Plans, adjudicating on planning applications, monitoring and enforcement of water related responsibilities, enforcement of the regulations under the Nitrates Directive in their areas, development of Local Biodiversity Action Plans and Native Woodland planting schemes, along with protecting and educating on local heritage and biodiversity. In more recent years, Local Authorities have been given responsibility for the conduct and scrutiny of Appropriate Assessments (AAs — assessments of the potential adverse effects of a plan or project on SACs and SPAs) and Environmental Impact Assessments (EIAs — assessments of projects and plans that are likely to have a significant effect on the natural environment).

All of the above place a large responsibility on Local Authorities to ensure that their actions achieve the best possible outcome for the conservation and protection of biodiversity. These are very complex areas of responsibility to be serviced and overseen. The DNFC does not believe that the Local Authorities are adequately resourced or structured to manage and deliver on all of their statutory habitat protection obligations and the Fourth Action Plan should be more ambitious in this regard. Why is it after 20 years since it was first proposed that there is still no mechanism by which Local Authorities can be made aware of changes in SACs or loss of habitat within their areas of responsibility? Why haven't we seen a closing of the gap in expertise and knowledge available at local government level? We propose that Biodiversity Officers should be employed directly by NPWS and inserted within the system of local government as vigorous well-informed expert advocates for the protection of natural habitats, equipped with the necessary legal supports, enabled to engage with priority issues and to operate under the direct guidance of the existing national and county experts. Our views are set out in detail in Appendix 2.

Similarly, we do not believe that **An Bord Pleanála**, as the body which ultimately decides on development applications, has the scientific or ecological competence to effectively adjudicate on the impacts of planned developments on biodiversity. Substantial additional specialist in-house staff, with the necessary expertise, are urgently required in both Local Authorities and An Bord Pleanála to understand and evaluate the quality, accuracy and comprehensiveness of all the components of

ecological assessments, to ensure that biodiversity matters are adequately considered in the decision-making process. This should be a pillar of the Fourth Action Plan. It is essential to verify the quality, veracity and comprehensiveness of ecological assessments submitted as part of planning applications and that the associated field work is carried out in season.

Teagasc (The Agricultural and Food Development Authority) is both a statutory body and a registered charity with an advisory and instruction/education role. It is viewed by some as an independent body despite the composition of its Board. It is far from clear that the organisation has the will, or understanding, or the capacity to take on board expert independent opinion on the biodiversity consequences of the implementation of its advice and direction to its clients who have the aspiration to maximise their CAP funding via the Department of Agriculture, Food and the Marine (DAFM). Indeed, it is our view that Teagasc has not engaged in any meaningful, statutory or informal dialogue with the biological recording community. Advice emanating from Teagasc suggests that either there is a large deficit at policy development level in its understanding of the importance of biodiversity issues, or else that any latent biodiversity concern has been totally eclipsed by the objective of maintaining the levels of intensity of food production. This Action Plan should seek to address that deficit.

Local Biodiversity Action Plans

The DNFC considers that many of the actions contained in recently published costly Local Biodiversity Action Plans for urban areas amount to little more than 'gardening' of the landscape, formulated through generic copy-and-paste exercises, and not tailored to the locality. We are concerned that this aspect of local biodiversity action is not adequately addressed in the Fourth Action Plan, which in our view, underplays the fact that such horticultural activities are unlikely to have any measurable beneficial impact on authentic biodiversity. The Biodiversity Crisis is not one of urban gardens or roundabouts but has arisen from the destruction of our original habitats. (For our position on the improper use of 'wildflower' seed mixtures, see www.dnfc.net)

There is now a high level of confusion as to what actions might have a positive impact on biodiversity, a confusion which is increasingly being exploited by commercial interests to the detriment of real actions. Unfortunately, there are a plethora of proposed actions contained in the draft Fourth Action Plan which have the potential to aggravate this situation further. The DNFC believes that this Action Plan should instead have a particular focus on biodiversity conservation. It should contain specific actions to promote and support informed scientific assessment, detailed protection plans, and a competent independent audit and evaluation to ensure the conservation of the existing biodiversity. Local Authorities should be tasked to prepare realistic and well-informed Biodiversity Action Plans that ensure the protection of natural habitats of high conservation value, and address any threats to these habitats, within their boundaries.

The concern for biodiversity loss is driving an industry of desktop ecologists with scant knowledge of the biogeography of Ireland, in terms of what species or habitats are rare and threatened versus what is common and not in need of protection. More recently, 'biodiversity ambassadors', with little relevant knowledge and understanding of the issues, are being employed by landscaping firms to draw up Biodiversity Plans that are essentially landscape planting proposals. This is all too readily facilitated by access to the internet facilitating the copying and pasting of text and images in order to produce what appears, to the uninformed eye, to be an informed and original plan. Ultimately, there is an urgent need to train more field biologists and taxonomists, who have a detailed knowledge of habitats and species. Our Higher Education Institutions, for a variety of reasons, have failed in this aspect of biology in which formerly they excelled. Knowledge of the requirements of rarer species,

their habitats, and the necessary requirements to ensure population viability and connectivity, takes time to accumulate. The Fourth Action Plan should urgently address this problem.

Flora Protection Order species

The current iteration of the Flora Protection Order (S.I. No. 235 of 2022) lists 89 vascular plants, 41 mosses and 25 liverworts which have been identified as being species of high biogeographical and rarity significance in Ireland. Most of these species are confined to habitats which are themselves rare. Others are of international significance, due to their association with moist Atlantic air streams. Many of these species and their habitats, have suffered catastrophic declines in their geographical ranges in recent years, following serious alterations to their local environment. Their decline can usually be attributed to large-scale infrastructural changes (e.g. drainage), to intensification of agriculture, driven by grant aid resulting in high livestock densities, and by the assignment of large areas of high scenic and nature conservation value to recreational pressures (golf, walking). Many areas of high nature conservation value and importance are now buried under dense conifer plantations.

The fourth Action Plan must address the management and deployment of the important body of data relating to these species, which should be collated and enshrined within the NPWS. We set out proposals in detail in Appendix 3.

Conclusion

In summary, the principal objective of Ireland's Fourth Biodiversity Action Plan must be to conserve what remains of our authentic, natural habitats. Native species — of high biogeographical significance — are declining sharply in both extent and population size due to loss of habitat. Sites of high nature conservation value must be protected against loss and damage as a matter of the utmost urgency, by enforcing existing legislation, preparing and implementing evidence-based management plans and adopting other appropriate measures on a site-by-site basis, to ensure that wherever natural habitats of scientific interest still remain, they are adequately protected. Sites which have been damaged but still have potential for partial restoration should be managed sensitively to allow natural regeneration and ensure that damaging practices cease.

Addressing biodiversity loss must focus in the first instance on halting this decline. In order to do this, we must understand the nature of the decline and what has driven it to this point, including the failure of the state to protect designated sites, as well as other comparable undesignated (often smaller) sites of scientific interest, which are afforded no legal protection. These small areas have become more important as the surviving remnants of the former natural landscape, since other sites have been destroyed. In our experience, our indigenous biodiversity, including its distinct genetic component, is already under severe threat in Ireland.

The Fourth Action Plan should ensure the proper enforcement of conservation legislation for sites of high nature value. The Plan should specifically address those provisions of the legislation that are inadequate, and address why many sites of high nature conservation value are still not legally recognised or designated for conservation. These are the chief causes leading to the destruction and degradation of many parts of the countryside which were formerly rich in biodiversity and of ecological and scientific importance.

Appendix 1: Putting Knowledge to Good Purpose

The biodiversity crisis which is upon us in Ireland is all too real, but the crisis, despite the massive amount of signage and publicity extended to it, is not in the flowerbeds, urban parks and suburban gardens of modern Ireland. Under cover of terms such as biodiversity, meaningless greenwash schemes have been launched and are actively promoted by commercial interests. These actions, have a very limited value for biodiversity in promoting urban greenspaces, and are primarily of benefit to humans and a number of common plant and insect species which have the capacity to occupy man-made habitats and their survival is in no way challenged. These actions obscure and deflect a real understanding of the nature and magnitude of habitat destruction, particularly in rural Ireland.

Individuals working within expert groups, (e.g. Botanical Society of Britain and Ireland (BSBI), British Bryological Society (BBS), and DNFC), operating in a voluntary capacity, have been charting the distribution of our indigenous flora, fauna and habitats for over three centuries. This accumulated knowledge has resulted in the creation of millions of occurrence records illustrating the sites where rare species and habitats occur. These individual expert recorders, with an intimate knowledge of the individual rare species, their locations and habitat preferences, have well-informed historical perspectives on the character and consequences of the changes which have taken place. They are fully aware of the threats that exist and the factors which have led to the crisis in which we find ourselves. With their familiarity with the past, they can inform the present.

Their researches, expressed particularly by dot distribution maps, supported by large topographically secure data sets, indicate the extent to which state and semi-state bodies and commercial initiatives (forestry, drainage, peat extraction, grazing, price support mechanisms) have destroyed or greatly degraded many of our sites of high nature conservation value.

At planning level, various agencies fail to address these issues, typically invoking (if at all) a lack of in-house expertise and the absence of an authoritative topographical (GIS-enabled) basis which identifies the sites of these rare species and rare habitats at county level. The knowledge, generated by these expert organisations and individuals, has not percolated through to the various planning authorities. As a result, no comprehensive inventory of sites exists, other than for the officially-designated sites. Far too many undesignated sites have thus been lost or continue to deteriorate. It is not unusual for certain LAs to be completely unaware even of the locations of the legally-protected plants within their areas of administrative responsibility.

We cannot expect the various agencies concerned with responsible planning and habitat protection to make wise beneficial judgements if they are totally unaware of the locations or value of these significant sites, habitats and endangered species. Nor can any constructive informed engagement take place between the various concerned parties (proponent, defender and adjudicator) in this on-going knowledge vacuum.

Therefore, we propose the development of area-by-area inventories of sites where semi-natural habitat conditions still survive. These inventories (framed within local authority boundaries) and the rationale and evidence-base for their inclusion would incorporate listings of the rare species present on a site, comments on the strategic geographical significance of the site and its historical and biogeographical significance. Digital imaging (ground-based, aerial and LIDAR) has enabled the creation of many visual records illustrating the condition of a given site on a specific date. These elements, properly deployed, will indicate which changes are taking place, and thus produce a diagnosis (current characteristics) and prognosis (consequences, future prospects) of each site in the light of some proposed action.

These site accounts would be formed independent of any planning applications, grant schemes or other influences and would thus stand as a financially-disinterested listing for consideration by various parties concerned with the future managements of our natural landscape. In this way, it would set the agenda for consideration by the participants in the EIA process, including the LAs themselves, who are currently in a position to determine (limited by their internal staffing capacity), whether environmental impact statements are required. It also enables the concerns of local citizens to be brought to bear in an informed manner on issues of genuine concern, and might forestall the introduction of mischievous or vexatious objections.

The site listings would be compiled by experienced biological recorders (e.g., Botanical Society of Britain and Ireland (BSBI) County recorder level or higher) with a provision to incorporate other sites over time. The site accounts would constitute a publicly-available factual basis for reporting on certain aspects of the state of the Irish environment to agencies such as NPWS, EPA, Coillte and Teagasc, by providing a continuing independent informed commentary on the impact of landscape changes on our indigenous species and their habitats. This would also provide a forum where citizen science could engage constructively with the real issues both within Ireland and at EU level. In addition, the content would provide a basis that would allow for an evaluation and audit of state expenditure, to determine which benefits and losses have been brought about by such initiatives and expenditure. These materials should be made available in printed form or on easily-accessible digital platforms, and not concealed behind layers of difficult-to-use digital technology.

Funding for this type of operation is negligible in the context of the patterns of state and commercial expenditure, ostensibly for biodiversity which by now are usually little more than cut-and-paste exercises from existing open-access digital platforms. Most serious biological recording is conducted by *pro bono publico* scholars and scientists, operating independently of academia or commercial ecology. If sites and their included species are protected as a result of informed actions of this sort, that would be a sufficient and enduring recompense for the altruistic actions of Ireland's expert biological recorders.

This is an opportune time to consider action of this sort. The idea is not new — the lamented An Foras Forbartha *Areas of Scientific Interest* schemes attempted to do this in the early 1970s for some well-known sites and NPWS is gradually in the process of building the knowledge base for sites designated in the context of the European Habitats and Birds Directives (NATURA 2000 sites). Unfortunately, smaller vulnerable sites, not qualifying under these criteria, are usually unrecognised by the various planning processes which instead concentrate on the legally-protected sites.

However just because an action is not illegal, it does not follow that it is in any way justified. Ultimately, we are concerned with the recognition and protection of these sites and their included typical species, for their own sake and not because of their utilitarian value. Having survived for thousands of years these very special sites constitute their own living evidence and deserve better than to be treated as nothing more than platforms for pollution control, recreational activity or grant harvesting. Our landscape, our country and our citizens deserve better than this.

Appendix 2: Biodiversity Officers

An ongoing difficulty relates to the position of Biodiversity Officers and the level at which they are installed within the local authority system. A great deal of their energy is currently assigned to the promotion of actions which are moulded by reference to the low standards set by previous national biodiversity plans, and are about as effective. As a direct consequence of this lack of informed guidance and priority-establishment, such actions are delivered in areas where there is little prospect of meaningful action being taken by the relevant body in the protection of significant species of flora, fauna and their supporting habitats.

Biodiversity Officers should be employed directly by NPWS and inserted within the system of local government, not as apologists for cosmetic landscaping and proponents of community-based greenwashed actions (signage, gardening), but as vigorous well-informed expert advocates for the protection of natural habitats and their included species. To this end, the officers should be equipped with the necessary legal supports to ensure that each local authority, at a minimum, is consistently required to implement the provisions of the Wildlife Act, particularly in relation to the various protection instruments such as the *Flora Protection Order*.

By so doing, the NPWS and the Biodiversity Officers will be enabled to engage with priority issues and to operate under the direct guidance of the existing national and county experts. These national experts, at present do not have a recognised status within the planning system — nor were they consulted in the drafting of this NBAP — and most operate in a *pro bono publico* capacity. If the Biodiversity Officer is positioned within the planning department of each local authority, with full access and input to the decision-making process, it then becomes possible to evaluate the competence of these bodies to deal with habitat protection issues and to report back directly to NPWS where due consideration has not been given to these serious matters. It would also become possible, through official recognition of the local and national experts, to ensure that their accumulated knowledge is incorporated directly into the culture of the local authority planning departments and subsequently included in county and local development plans.

Biodiversity officers require considerable legal and administrative training and competence as well as strength of character, in order to protect the remaining elements of natural biodiversity. To assign them to the protection of that which is not endangered devalues them at a professional and personal level. Isolated, in the present system, they lack expert support and affirmation. This non-engagement with serious issues has meant that biodiversity officers are presented with and diverted by many local issues, many trivial, others optics-driven, and are unable to address their energies to serious habitat protection issues. By being direct employees of the state (NPWS), their career positions can be safeguarded within a stable national body, and not threatened by the indifference or hostility to conservation matters exhibited by some state bodies.

By forming a cohesive body of well-equipped biodiversity officers, operating in a collegiate manner with the direct support of local and national experts, and answerable directly to NPWS, their presence will contribute to the effective inclusion within the planning departments, of the necessary knowledge which at present is so demonstrably lacking within the local authority system.

Additionally, they will be positioned in areas where they can assess and report on the effectiveness of any decisions or actions being undertaken by planning departments. They will also be enabled to comment and bring to the attention of planners, the merit (or otherwise) of the biodiversity content of various submissions entered by the applicants and opponents of any particular development or on larger infrastructural matters. This can be achieved through reference to the NPWS knowledge base, the deployment of its legal powers, and through an empowered expert local biodiversity

forum, one which must be populated with and informed by established expert biogeographers, phytosociologists and others in related disciplines.

Appendix 3: The Flora (Protection) Order

Under Section 21 of the Wildlife Act, an Order was made in 2022, entitled Flora (Protection) Order, declaring certain plants to be protected throughout the State. Under Section 21 it is an offence for a person to cut, pick, uproot or otherwise take, purchase, sell or be in possession of any plant whether whole or part, of a species mentioned in the Order, or wilfully to alter, damage, destroy or interfere with the habitat of such a species, except under licence of the Minister, and then strictly for Scientific, Educational or other such purposes. This prohibition extends to the taking or sale of seed. In addition, it is illegal to alter, damage or interfere in any way with their habitats. This protection applies wherever the plants are found and is not confined to sites designated for nature conservation.

This current iteration of the Flora Protection Order (S.I. No. 235 of 2022) lists 89 vascular plants, 41 mosses and 25 liverworts which have been identified as being species of high biogeographical and rarity significance in Ireland. Most of these species are confined to habitats which are themselves rare. Others are of international significance, due to their association with moist Atlantic air streams. Many of these species and their habitats, have suffered catastrophic declines in their geographical ranges in recent years, following serious alterations in their habitat characteristics. Their decline can usually be attributed to large-scale infrastructural changes (e.g. drainage), to intensification of agriculture, driven by grant aid resulting in high livestock densities, and by the assignment of large areas of high scenic and nature conservation value to recreational pressures (golf, walking). Many areas of high nature conservation value and importance are now buried under dense conifer plantations.

The nature and extent of this destruction, usually driven by commercial enterprises, has not been quantified. Indeed, many ecologists, working on behalf of developers, seldom invoke the provisions of the FPO or geographically contextualise the significance of the occurrence of significant species within their study areas. It is an immediate matter of concern as to whether the various applicants and the planning authorities at local and national level have the necessary in-house knowledge, technical competence and value systems to adjudicate on the merits and validity of any particular large-scale or local issue, as set out by the applicant. It is therefore imperative that the consequences of this administrative weakness be addressed, while surviving populations of these legally-protected species are still traceable.

The substantial body of occurrence data which has built up detailing the locations of these colonies of protected flora is largely unknown to the various development-driven state agencies charged with the management of the countryside. However, these species, and their supporting habitats, are immediately threatened and many sites have already been eliminated from the rural countryside. The significance of the occurrence of these legally-protected species is of a very different order of magnitude from that of the commercially-driven 'wildflower' sowings which have so seriously distorted the popular perceptions of the all-too-real biodiversity crisis. Rare species have become rare because their habitats have unusual characteristics which are now uncommon in Ireland. Cosmetic quick-fix 'wildflower' sowing trivialises the real issue of the destruction of natural self-sustaining habitats and deflects popular perception from a realisation of the true nature and impact of land management practices. Much more seriously, Local Authorities and others have been taken in by these promotions and proffer actions such as these as being meaningful contributions towards alleviating the biodiversity crisis, apparently attributing these losses to lack of food for commonly

occurring urban bees. The effect of this is that the resources of the Local Authorities are diverted into the protection of unthreatened species, whilst ignoring the protection of the FPO species and their habitats. Development applicants have similarly embellished their proposals with offerings of this type, and it appears that Local Authorities do not have the capacity so see these actions for what they are.

We propose that the management and deployment of this important body of data, information and knowledge related to these endangered and legally Protected Species, be collated and enshrined within the NPWS and that the necessary statutory provisions to protect the creators of the knowledge body, operating in a *bona fide* capacity, from legal attack by aggrieved third parties be put in place and activated.

The intent of this proposed action is to ensure that whenever a planning application, which will have an impact on the character of the rural landscape, is under consideration, that the necessary information is immediately available to national and local authorities, so that they may constructively address and extend due consideration to the issues of concern. In this way, the applicant will be required to respond in a competent manner to the concerns raised by the local authority itself, by national government (especially NPWS), and the various other relevant state agencies. Agencies which should give due consideration to this source of knowledge, awareness and responsibility include EPA, Teagasc, Coillte, the various bodies responsible for waterway management, the tourism industry in its many facets, and the various decision-making authorities including An Bord Pleanála. These bodies would then no longer be able to plead lack of knowledge resources. As part of a planning application by any party, it would facilitate the submission of a declaration demonstrating the impact of the proposed action on the habitats included within the subject area and its hinterland. In this way the broader issues of remote habitat degradation, brought about by actions such as drainage, could be addressed and the veracity of the applicant's submission for the immediate subject area (diagnosis) be tested by NPWS and set against the boarder impact as declared by the applicant (prognosis). In some respects, this proposal mirrors the spirit and provisions included within the Appropriate Assessment guidelines in relation to designated areas such as SACs, but in addition it addresses the immediate consequences of the proposal, by requiring a statutory declaration by the applicant and its retained ecologist, as to the effects of the proposal, on the sites of occurrence of the legally-protected species. Many high-quality sites have never been conferred with SAC-type recognition or designation.

Modern technology has greatly simplified the matter of mapping the sites of occurrence of these species. GPS and GIS in combination can define at a very high level of precision the sites where these species grow and these files can be digitally-transmitted to all the concerned parties such as Local Authorities, An Bord Pleanála, Biodiversity and Heritage Officers, An Taisce, etc. Historical information can similarly be integrated into a GIS system, though with less precise definition of boundaries, due to the imprecise topographical nature of early records, created before the formation of the Ordnance Survey of Ireland.

By retaining direct governance, management and deployment of these occurrence data within the NPWS environment (as distinct from their being subcontracted to a private company) the data can be distributed to the various agencies with appropriate safeguards as to acceptable levels of data-resolution. In this way, data can be made available in a responsible and accountable manner, and not concealed by stratagems such as GDPR and commercial sensitivity. Many of the records could become available without cost, once the effectiveness of the outlined measure can be demonstrated. As a first action, all relevant staff within NPWS, especially the conservation ranger team, need to be made familiar with the known and previously-known locations of all the relevant

legally-protected species in their areas. There is also the need for the establishment of a mechanism where members of the public (expert or concerned) can contact the relevant conservation authorities when they detect infringements of the FPO. All state land, including land acquired but not yet developed, can be mapped at the fullest resolution. Where FPO species are recorded from private property, lower levels of resolution (e.g. 1 km) would be appropriate. In this way, the applicant would still be made aware of its responsibilities, either during the planning process, or previously, when consideration was being given to site acquisition. The basic question, put simply, is what will be the effect of a proposed development on the site(s) of the legally-protected species? The intent of the proposal is to strengthen the role of NPWS in the discharge of its over-arching statutory obligations. By integrating the national botanical experts into a formalised advisory process, NPWS and the relevant experts can combine their knowledge to good effect. It is essential that this proposal would be directed from within NPWS, with a nominated contact and permanent staff member and agreed protocols regarding the transmission of data to third parties and the notification of the legal-issues governing these actions.

In furtherance of this, we call for a meaningful and ongoing engagement by NPWS and the main botanical recorders in the Republic of Ireland to progress this urgent matter. The substantial accumulated body of relevant knowledge needs to be assessed and collated as a first priority, including historical data compiled by the major botanists for over two centuries, and of which, many participants currently involved in ecological evaluation, appear entirely unaware. A more disturbing aspect of the way in which such evaluations are currently conducted, is the manner in which ecological practitioners rely not on the full body of relevant information, but on content that can be easily downloaded and then incorporated into their submissions, without any reference to the primary sources for these data. By an evaluation of the current conservation status of the relevant target species set against the known former occurrence records, it becomes a relatively straightforward matter to identify the factors which have led to the demise of their habitats, and *inter alia*, to isolate conscious (e.g., agricultural funding) and unconscious actions which have led to this situation. While these proposals relate to the status of legally-protected plant species, similar principles with regard to notification, should apply to the protection of the habitats of important invertebrate species (e.g. *Vertigo* snails, Marsh Fritillary butterfly and scarce bees). Similarly, in the course of enacting habitat protection measures for legally-protected species, it becomes possible to preserve and maintain the integrity of populations of other rare and endangered species not currently safeguarded.

Appendix 4: Comments particular to sections of the draft Action Plan

Biodiversity — what is it and why does it matter?

Page 3, Para. 4 'Healthy ecosystems provide the essential resources …' The value of our natural heritage is set out in economic terms. First and foremost, natural ecosystems, habitats and species are of **intrinsic value** — important for their own sake — as the authentic expression of the natural world; they cannot be replaced or recreated if lost.

Page 3, Para. 6 'Biodiversity loss, that is, when the variety of species, genetic resources or communities is reduced, is a huge social, political …' It is first and foremost a **natural loss** and additionally, a loss in terms of **natural science** and **natural history**,

Page 4, para. 1 'Ongoing unsustainable development has serious impacts on natural habitats and species, resulting in very significant declines in the population sizes of mammals, fish, birds, reptiles and amphibians …' Insert (at least) the following **'range'** (as well as population size), '**plants, fungi', 'invertebrates'** and **'microbes'**.

Indicators
Many of the indicators are soft, therefore they are incapable of measuring the effectiveness of the linked actions. Many indicators are qualitative or merely aspirational and are not capable of any genuine quantitative evaluation of the effectiveness of the associated actions.

Biodiversity should be assessed by the use of appropriately selected and quantitative bio-indicators. Given the apparent failure of previous action plans, as judged by the state of Ireland's biodiversity, self-assessment does not inspire confidence. Independent assessors and assessments are needed.

Independent Auditor / Assurance
In our view, the composition of the *National Biodiversity Forum*, needs to be re-evaluated so that it has greater field competence and expertise necessary to carry out a full and independent review or evaluation of the NBAP.

Navigation
"Each action has a designated owner(s)" yet the public are the owners according to the plan. Will the reputed owners know who they are? Are the designated owners to self-evaluate their own achievements? Will there be clear criteria provided to the designated owner for success of failure?

Objective 1

Adopt a Whole Government, Whole Society Approach to Biodiversity
Biodiversity has an intrinsic value and should not be valued merely for the ecosystem services that are allegedly being provided. However, various parties to the plan appear to have misconstrued the function and origin of the "services". The principle of the polluter pays must not be interred.

A clear statement / definition of "**sustainability**" and other terms is needed to counter statements that the activities of certain enterprises are sustainable or that their negative impacts can be offset by fabricated actions.

1B1: DHLG will *explore* placing the NBAP on a statutory footing. This should be a collective and inclusive process not one confined to DHLG.

1B4: Number of biodiversity officers in Local Authorities
A weak indicator. Unless biodiversity officers have a statutory role within their LAs they will continue to be ineffectual within the bureaucracy. The effectiveness of the office needs to be measured.

1B5: All Local Authorities will have a Biodiversity Action Plan in place by the end of 2026.
OPR's should have the task of monitoring quality and effectiveness.

1C2: By 2027, measures for biodiversity implemented under the CAP are monitored for their impact and efficacy.
Does Teagasc not already have the answers from its research programmes. Is Teagasc expected to credibly evaluate what are effectively its own proposals?

1C3: Incentives for farmers to create habitats for wildlife are in place by 2023
Is this a strategy for the digging of ponds and planting of hedgerows and multispecies swards? This type of *habitat creation* is likely to have impact, at best, on common species. It would be more productive to try and salvage remaining nature conservation value fragments and where there is potential to reverse damage caused by the draining of wetlands etc.

1C4: DHLG will establish a subgroup of the Biodiversity Working Group to explore how the National Biodiversity Indicators can incorporate relevant policy areas.
First step should be review the Indicators, which are "soft" and not fit for purpose.

1D1: Communications expert will be appointed to NPWS. By 2027 public awareness of biodiversity will be increased by 20% against 2023 baseline.
The issue of tackling Biodiversity misinformation should be a priority. Awareness must also be translated into actions. Press Officers should be capable of publicising factual progress and achievements**.**

1D4: By 2024, a Biodiversity Citizen Science Strategy is published and in progress
…… Number of biological records submitted to national citizen science-driven monitoring schemes. Quality rather than quantity is needed. Citizen Science approach has its merits in creating awareness by involvement in recording the more common organisms which can be easily and accurately identified. But it is this approach is not a substitute for the involvement of experts especially for scarce or critical species. However, the rudimentary number of records in a data centre says nothing about quality or value and is a diversionary figure.

1D7, 1D8, 1D9: The Business for Biodiversity platform receives support to establish and grow by 2026
Is business community not able to finance itself from the ecoservices exploited? The value for biodiversity of this platform is at best 'not proven'.

DHLGH and DAFM are to fund, support, and promote the work of the Business for Biodiversity platform during its initial set up phase of three years;

Business for Biodiversity platform will engage with business to enhance private sector action on biodiversity;

The Business for Biodiversity platform will provide a mechanism to match private sector resources with appropriate biodiversity projects.

We would like to ask the following:

- How is the Businesses for Biodiversity platform to operate?
- What level of taxonomic, biogeographical or ecological competence will be employed in this platform?
- Are harmful biodiversity business actions to be offset elsewhere?
- Are relatively meaningless actions to 'enhance biodiversity' to be employed on already substantially degraded sites?

For example, we draw your attention to the website: DCs for Bees (Data centres for Bees), https://www.hostinireland.com/pollinator-plan
wherein to get the All-Ireland Pollinator Plan stamp of approval, it is sufficient to commit to the following:

1. To carry out at least one pollinator-friendly action suggested in this document within the first year of signing up, and to plan to carry out two additional actions by 2025.
2. To track the pollinator actions (https://pollinators.biodiversityireland.ie/) you have planned, implemented or maintained each year when contacted, to help us promote your work.
3. That your business supports the ethos of the All-Ireland Pollinator Plan.

A sample of actions that would suffice includes the following:

Action 4 – Identify new and underutilised outdoor space – balcony, roof, window boxes for pollinator-friendly planting
Action 6 - Plant pollinator-friendly bulbs at your office or data centre
Action 7 - Plant pollinator-friendly containers in plant and machinery areas
Action 12 - Plant a native wildflower meadow at your property.
Action 18 - Install a bee hotel at your property
Action 19 - Introduce bee hotels in plant and machinery areas
Action 23 – Influence suppliers and contractors to take action within the DCs for Bees Pollinator Plan
Action 24 - Ask local businesses to sign up to the All-Ireland Pollinator Plan
Action 26 - Influence your business network to take action within the DCs for Bees Pollinator Plan
Action 29 - Fund printing of pollinator guidelines for community groups
Action 31 - Fund printing of the Junior Pollinator Plan for local schools
Action 32 - Sponsor signage for community groups

Indeed, this initiative contains the logos of both the All-Ireland Pollinator Plan 2021-2025 and the NBDC and includes the following statement from the co-founder and project manager of the All-Ireland Pollinator Plan and a member of the Business for Biodiversity Platform:

"*Host in Ireland was the first industry-wide organisation to approach us about how they could help address bee declines in Ireland. We have worked in partnership to ensure they were creating the right plan of action at the right time for the right results*.

"*We are delighted that Host in Ireland and its data centre industry partners have stepped forward and are uniting to make a difference with the DCs for Bees Pollinator Plan*."

We also draw your attention to the opening forward in this document:

"*One third of Ireland's 98 wild bee species are threatened with extinction and our common bumblebees continue to show startling declines in abundance. Rare species are disappearing through habitat loss and our common species are struggling because the way we currently manage the rest of the landscape means there simply isn't enough food for them to survive. Pollinators are in that. We can change their fate*."

And ask:

- Why is the importation of bumblebee species for commercial fruit farms not stated here as a threat to our common wild bumblebee species?
    - Surely a goal of the All-Ireland Pollinator Plan is to educate people?
- Or the importation of non-native strains of honey bees for the increased demand in hives resulting from the misguided notion that honeybees are under threat?
    - See Protection of the Native Irish Honey Bee Bill 2021 https://www.oireachtas.ie/en/bills/bill/2021/133/
- Specifically, what benefit will any of these actions provide for our rare and threatened pollinators?
- What assessments of the results of suggested actions on our rare and threatened pollinators have been carried out?

- Indeed, what progress has been made in assessing the status of our rare and threatened pollinators in recent years?
- What proportion of the conservation actions, or ecological studies, have been carried as recommended in the 2006 Regional Red List of Irish Bees report?
    https://www.npws.ie/publications/red-lists

For the multiple reasons, why one should not plant commercial 'wildflowers', please see:
    https://dnfc.net/wildflower-seed-mixtures/
For the numerous reasons why generalised provisioning of wildlife is harmful to conservation efforts, please see:
    Shutt & Lees (2021). Killing with kindness: Does widespread generalised provisioning of wildlife help or hinder biodiversity conservation efforts? https://www.sciencedirect.com/science/article/abs/pii/S0006320721003475#:~:text=Provisioning%20of%20wildlife%20with%20food,natural%20resources%20for%20recipient%20taxa.

Additionally, we note the following action:
2B12 - NPWS and DAFM will continue to provide funding for NBDCs monitoring of pollinators
Performance Indicator: € in funding for NBDC pollinator monitoring activities.

Surely, it is relevant to ask here why the performance indicator does not contain an independent evaluation of the effects of this and previous funding on halting the decline in pollinators in Ireland, particularly in relation to our rare and threatened species?

The NBDC:
1B3 - DHLGH and the Heritage Council will define the strategic role and remit of the National Biodiversity Data Centre in meeting Ireland's biodiversity data and information needs and in assisting in the delivery of this Plan

1D4 - The NBDC will produce and implement a Biodiversity Citizen Science Strategy to promote citizen engagement with both terrestrial and marine biodiversity and to develop greater awareness of the value of local biodiversity

2B11 - NBDC with partners in Northern Ireland and other actors listed in the All-Ireland Pollinator Plan 2021- 2025 will implement appropriate actions listed in the Plan, and support farmland pollinator conservation activities post-2025

2B12 - NPWS and DAFM will continue to provide funding for NBDCs monitoring of pollinators

2G4 - DHLGH, NBDC and relevant partners will develop dedicated biosecurity protocols, standard operating procedures and guidelines for government departments by 2024

2G5 - DHLGH, NBDC and relevant partners will implement recommended measures arising from the 2021 EPA Report No. 368 Prevention, Control and Eradication of Invasive Alien Species by 2026
2G6 - NBDC will continue to produce Risk Assessments for potential invasive alien species
NBDC will update the State of Knowledge and Key Knowledge Gaps in Ireland's Biodiversity report as
5C8 - the basis for development of a national biodiversity monitoring framework

5C9 - The NBDC will, with relevant state partners, devise and undertake a systematic baseline survey for priority invasive species and hot-spot introduction sites with subsequent monitoring. This will be state-led and supported by Citizen Science engagement programmes

5D4 - DAFM and Teagasc will work with NBDC to build capacity to work towards ensuring habitat biodiversity assessments are conducted on all NFS farms on a continuous basis

6D1 - DHLGH and NBDC will ensure that Ireland increases the quantity and quality of its contributions to European and international biodiversity data hubs and networks such as the Global Biodiversity Information Facility and the European Environment Agency.

We note that the NBDC is a programme of the Heritage Council and is operated under a service level agreement by Compass Informatics, a commercial enterprise. See:

https://biodiversityireland.ie/
https://ie.linkedin.com/in/gearoidoriain

"*It is a commercial enterprise with data analytics expertise that operates the Centre under long term service level agreements – Compass Informatics has influenced the digital data centric approach and the focus on data science*."

In this light, we ask the following:

- What proportion of staff in NBDC have expert taxonomic expertise relating to the flora, fauna and fungi of Ireland, their historical biogeographical distribution and context in the landscape?
- Is the State attempting to offload responsibility for the delivery of the NBAP to an organization operated by a private company with limited expertise in biodiversity?
- What proportion of the financing of NBDC goes toward bioinformatics versus knowledge accumulation on species distributions in Ireland? Where is this information publicly available?
- What proportion of records in the NBDC relates to common none-threatened species, generated through various citizen science initiatives?
    - After all, this information should be readily extractable through bioinformatic methods by people with the relevant taxonomic knowledge.
- What proportion of existing records in the NBDC came from work carried out pre-1980 by voluntary, non-paid experts and voluntary NGOs?
- What rights extend to this commercial enterprise in terms of usage of the data?

- What verification protocols are employed by the NBDC and where are these protocols publicly accessible?

Objective 2

Meet Urgent Conservation and Restoration Needs
Need to define what is meant by the terms in this document e.g. **Conservation, restoration, rehabilitation** and **landscape ecological connectivity.**

Conservation and restoration of biodiversity are equally important in the wider countryside, beyond protected areas, as is wildlife in our cities and towns
What is meant here?

All SACs and SPAs should already be designated by Statutory Instruments etc.

A**t least 30% …. Will reach favourable status or show a positive trend….**
A very low target

2A6: Number of farmers participating in nature-based initiatives.
Need to ensure that nature-based initiatives (whatever they may be) are ecologically sound and not cosmetic or retrograde. Both quality and quantity required in order to assess.

2A8 … *ex situ* conservation initiatives
zoos, aquaria and botanic gardens to identify native species in need of conservation that may benefit for *ex situ* management
Needs amplification as to what is envisaged**.**
Dublin Zoo….. 2A9
What is the plan?

2A10 Udaras to identify lands suitable for inclusion in the All-Ireland Pollinator Plan ….. Biodiversity corridors imitating the structure and diversity of native vegetation.
What expertise has this organisation in these matters?
It is misplaced to encourage promoting initiatives to "imitate the structure and diversity of native vegetation" by such an organisation. The use of the first official language should not be licence to create a disturbance within or adjacent to habitat of considerable nature value.

Outcome 2B
The wording of this objective suggests a very low priority – referring to areas "that may not be protected but *may nevertheless* provide habitat to protected species….."

2B1
Policies are not to be in place until 2027 the end of BAP period
Unclear as to how it will be known if the actions are "realistic" and as to what is meant by "significant habitat maintenance and restoration measures".
Proposed indicators are too vague "…. Share of Utilized Agricultural Area under management commitments…" "Improvement of Natura 2000 management".

Emphasis needs to be on retaining existing hedgerows and not on idiosyncratic management and planting schemes. Teagasc advice on the planting and maintenance of hedgerows needs to have a firm evidence base and not be beholden to partiality, for example by creating new terms such as 'Topped Hedges'. See here:

https://www.youtube.com/watch?v=j832t8IqSH0&ab_channel=Teagasc

Is Teagasc bending to the Contractor Industry with the current recommendations to cut hedgerows to an "A roof" shape, with the odd 'lollipop' thorn tree for 'pollinators? There appears to be a grave lack of understanding as to what constitutes a hedgerow in much of the advice given.

Additionally, Teagasc needs to urgently remove outdated information (by their own standards) on their websites. For example:

https://www.teagasc.ie/news--events/daily/environment/hedge-cutting-advice.php

"Teagasc advise to let them grow up to a height of 1.5m or up to the height the hedge cutter can reach." This outdated information is feeding into the current devastation that is occurring throughout the countryside with relation to our hedgerows. Alongside this, outdated advice in 'Green Cert' manuals needs to be revised. As a matter of some urgency, Teagasc needs to engage with people knowledgeable of the traditional methods for managing hedgerows.

2B2
F.1.iii indicator is feeble.

2B3
What are biodiversity rich landscape features?

2B4
What baseline is being established?

2B5
Opaque target and dubious financial indicator

2B6
Will the Peatland Strategy for 2025 not be completed or are target dates merely aspirational?

2B8
Need for confidence that National Forestry Strategy and Forestry Programme will enhance biodiversity. This objective suggests that natural biodiversity enhancement may or may not be an outcome – requires sound evidence that it will?

2B9, 2B10: DAFM and native tree planting

Purchasing of native trees and shrubs – native provenance and origin and non-selected forestry genotypes We note the following target outcome and stated action relating to the planting of native tree species

A diversified national and local native plant stock is available for tree and landscape planting schemes by 2027.

Yet, the action relating to this outcome simply states:

(2B10) - **DAFM, Local Authorities, TII, DHLGH and OPW will strive to use native species, varieties, and landraces from appropriate native sources in their landscaping works, where the use of such material is appropriate**

We fail to understand how this action is linked to the stated outcome.

With respect to trees in Ireland, the rising incidences of non-native tree pests and pathogens are threatening the health and sustainability of both our native and non-native trees and are having significant impacts on woodlands, forests and hedgerows in Ireland.
See the following from: O'Hanlon et. al. (2021) Catalogue of pests and pathogens of trees on the Island of Ireland. Dept. of Agriculture, Food and the Marine.

- "*In the last decade however, the greatest risk to trees and forests on the island of Ireland is the introduction of non-native pests and pathogens."*
- *Where 57 pests and pathogens, not currently in Ireland are deemed to pose a high threat to trees*
- *"A dearth of scientific expertise – and consequently a lack of surveys – for certain groups of pests and pathogens including insects and bacteria, fungi and oomycetes."*
- *"This lack of understanding of fungal and bacterial communities of plants in Ireland is worrying as these are some of the most threatening pathogens to tree and plant health globally"*
- *"the low level of reports of pathogens on imported consignments is most likely due to pathogens often having cryptic life cycles (see Migliorini et al. 2015), and the difficulty in surveying for plant pathogenic microorganisms in general (Morales et al. 2019). Furthermore, the use of pesticides on plants for planting can often mask symptoms of disease caused by pathogens, leading to the pathogen not being detected during border surveillance (Brasier 2008).*
- *"The regulation of plant health at the international level has been criticised by many plant health scientists as being unsuitable for preventing pest and pathogen movements in traded commodities. Many of the issues with the legislation have been discussed already above, and include:*
  (i) a reliance on visual inspections on plants and plant products which can miss asymptomatic infections,
  (ii) limited resources in NPPOs meaning that only a proportion of commodities can be inspected,
  (iii) the use of fungicides which mask pathogen symptoms in plants for planting,
  (iv) pest list-based regulation that overlooks undescribed organisms and
  (v) variation in the implementation of phytosanitary procedures."
- *"Until these issues are addressed it is likely further increases in the numbers of non-native pests and pathogens of trees will increase."*

We would like to see more people informed about the pest and pathogen risks associated with the importation of plants and other products; support for an indigenous nursery stock sector; and the employment of much more substantial phytosanitary measures.

Provenance and origin
Most people are unaware of the various risks associated with importation. Given that there is no recognition of our island status within the various trade laws that govern the movement of products into Ireland, we would like to see more people informed about the risks to our native trees associated with the importation of native species of exotic genotypes from the continent. The risk of introducing mal-adapted exotic genotypes which may hybridize with our native species, was clearly demonstrated a number of years ago, with the importation of Brown Bud Ash. See:

http://www.coford.ie/media/coford/content/publications/projectreports/cofordconnects/Identifying%20and%20characterising%20hybrid%20%60brown%20bud%20ash%20in%20Ireland..pdf

Additionally, we would also like to see more awareness in the biodiversity community about what is currently happening in the nursery stock sector, with respect to sending seed of Irish species abroad for a period of more rapid growth, with the subsequent reimportation of stock, which has the potential to introduce pests and pathogens.

We would like to see it clearly stated in all State-funded tree planting initiatives that, at a minimum, only native species of native Irish origin and provenance are planted and ideally these plants should be from seed of local origin.

"Origin is the place in the wild from which the original seeds or plants were collected. This is not to be confused with provenance, which is often the location of the nursery where seeds are produced or plants grown"
For definitions of provenance and origin, please refer to:

Council Directive 1999/105/EC on the marketing of forest reproductive material
https://assets.gov.ie/205558/12f636a7-a2a0-4b22-a437-b44c1fa701f8.pdf

Selected forestry genotypes

We would also like it clearly stated that forestry-selected genotypes of native trees are not used in any biodiversity plantings, as narrowing the genetic base of these species is the direct antithesis of the meaning of biodiversity. See Teagasc Birch and Alder Improvement Programme.

https://www.teagasc.ie/crops/forestry/research/irish-birch-and-alder-improvement-programme/

Currently, these trees are being grown on in partnership with nurseries.

- Are these trees being distributed under the Native Woodland Scheme?
- Or Local Authority funded tree planting schemes?

We find that many individuals, including farmers, advisors and ecologists involved in Biodiversity Acton Plans are not aware of what is currently happening in the nursery stock industry as outlined above and this poses a huge threat to both our native and naturalized tree species.

Invasive species

We note the various actions relating to invasive species in this NBAP and ask a number of questions:

- Do we have sufficient taxonomic expertise in place to identify the increasing numbers of insect and invertebrate pests that are arriving on our island?
- Will the National Invasive Species Management Plan (forthcoming) recognize that invasive microorganisms, rather than animals and higher plants, are currently, and will in the future, pose the greatest threat to our native biodiversity?
- For example:
    - Will this plan propose any actions for dealing with the invasive organism such as *Hymenoscyphus fraxineus*?
    - Will this plan propose any actions for dealing with the number of invasive *Phytophtora* strains that are currently in Ireland and are devastating our tree species?

Given our historical record, prudence would suggest that we should have much more robust strategies in place to prevent the importation of these organisms in the first place.

- Do we actually recognize that these organisms are an integral part of biodiversity in this NBAP?
- Do we have any understanding of the implications of introducing different genetic strains of these microorganisms?
- Is it sufficient that recommendations from DAFM to prevent importation of non-native invasive microorganisms simply reference human movement and not the nursery stock sector, given that we know, for example, that the horticultural trade was responsible for the introduction of a number of these invasive *Phytophtora* species. For example, see:
  https://www.teagasc.ie/media/website/crops/forestry/research/OHanlonEtAl2015PHYTOFORfactsheet.pdf
  and:
  https://www.jstor.org/stable/10.3318/bioe.2016.03

Will trees be planted on 'marginal' agricultural land which is of significant nature value or on land where native vegetation has been eliminated by fertilisation, herbicide, intensive grazing and silage production?

Does 2B10 relate to amenity horticulture activities?

2B11 Decline of pollinators is halted and reversed by 2030
In our view there are significant scientific flaws being used to underpin the pollinator plan. We do not have an established baseline data for pollinators in Ireland and there are no reliable data against which to measure success or failure of the pollinator plan within the timeframe of this NBAP.

2B12
Quantity of funding for NBDC monitoring of pollinators is not an indication of success or failure. There is no given estimate of the costs of the undescribed monitoring programme.

There is a need to put in place schemes to monitor a wide variety insects and not just (bee-)pollinators.
Citizen science initiatives are undoubtedly useful to raise awareness etc. but competent expert naturalists are needed for systematic monitoring of invertebrates in order to obtain high quality reliable information. Research is needed in relation to the ecology of a wide variety of invertebrates and their habitats. To confine monitoring to one or two groups of pollinators risks confining consideration of other components of biodiversity to secondary or even lesser importance.

2B14
OPW is to "minimise the loss of biodiversity". This is an unfortunate expression.

2B15
What is meant by "inclusions of biodiversity considerations in drainage"?

2B15, 2B16, 2B17
Are these so far down the line that they are being pushed into the 5th Action Plan i.e. post 2030

Outcome 2C
It is not good enough to ensure that there is "no further deterioration" in freshwaters.
Does this include the national water table?

2C2 Implementation of all actions of the Nitrates Action Plan by December 2025
The action plan does not appear to have any quantified outcome in relation to biodiversity and the

continuation of exemptions give the impression that the NAP is mainly driven by the need to have a plan rather than to solve the problem. For example, see the following:

https://assets.gov.ie/218449/f1a6725a-6269-442b-bff1-2730fe2dc06c.pdf

"This includes the adoption of at least one measure from the All Ireland Pollinator Plan in order to enhance biodiversity on farms which are either/or;

- Leave at least one mature Whitethorn/Blackthorn tree within each hedgerow.
- Maintain hedgerows on a minimum 3-year cycle. Cutting annually stops the hedgerow flowering and fruiting"

There appears to be grave confusion here as to what constitutes a 'hedgerow' as opposed to a 'hedge'. Additionally, how is this recommendation connected with nitrate pollution?

Objective 3

Secure Nature's Contribution to People

What is Ireland's distinctive approach of seeing and explaining our relationship with the natural world?

Give firm examples of how our planning system is or can become capable of "delivering for biodiversity". The current panacea proposing green infrastructure and nature-based solutions needs an urgent and rigorous review to determine that it is not in practice primarily 'green-washing'.

Green Infrastructure is well recognized as an ill-defined concept, we draw your attention however to the Comhar document, *Creating Green Infrastructure for Ireland - Enhancing natural capital for human wellbeing 2010*, which provides a definition of 'Green Infrastructure', as follows:

https://www.socialjustice.ie/system/files/file-uploads/2021-09/2010-08-creatnggreeninfrastructureforireland-comhar.pdf

'*An interconnected network of green space that conserves natural ecosystem* ***values and functions*** *and provides associated benefits to human populations*'

Or that contained in the South Dublin County Council Green Infrastructure Pre-Planning Guidance document 2017.

- "*Green Infrastructure (GI) can be defined as strategically planned networks of high quality natural and semi-natural areas with other environmental features,*
- *Which is designed and managed to both deliver a wide range of ecosystem services and protect biodiversity in rural and urban settings?*
- *An advantage of the GI is a spatial structure providing benefits from nature to people that enhances nature's ability to deliver multiple valuable ecosystem goods and services, such as clean air or water.*
- *It provides positive synergies between several functions in the environment*".

E.O. Wilson in (2016) in his book, Half Earth – Our Planet's Fight for Life (2016), had some words to say of this approach to conserving biodiversity, as follows:

"*Like most mistaken philosophies, the Anthropocene worldview is largely a product of well-intentioned ignorance. Its call for a new, human-centered approach to conservation – more precisely*

anti-conservation – has multiple sources. First is a false image of the history of conservation organizations. Second is an inadequate grasp of the biodiversity database. A third, less obvious source is the mistaken emphasis on ecosystems as the key level of biological organization, to the near exclusion of species and genes"

Little more needs to be said beyond the words of E. O. Wilson, in terms of the crisis of biodiversity loss. Increasingly, we can now see the term '**enhancement of biodiversity**' firmly embedded into public policy documentation. How can we possibly enhance natural systems, if we do not yet understand them? To view conservation from a 'Natural Capital' perspective has the potential to invite in all sorts of actors who have little regard or knowledge of the biogeography of Ireland.

See:

McAfee *et al*. (1999). Selling Nature to save it? Biodiversity and Green Developmentalism.

https://journals.sagepub.com/doi/10.1068/d170133

There is a need for environment impact assessment on tourism/visitor initiatives such as **Blueways** to ensure that they are both biodiversity neutral and sustainable.

We have had almost three decades of "Environment Awareness" activity since the European Year of the Environment accompanied by an accelerated loss in biodiversity.

3A4
LBAPs seen to date are largely copy-and-paste plans with little that will enhance or protect local biodiversity**.**

3A6
It is counter-intuitive to believe that integrating biodiversity will result in a mutually beneficial symbiotic approach.

3A8
To date there has been little evidence that Ireland's Tourism Policy is having any positive impact on biodiversity. A truly sustainable policy would be welcome.

The current business sector approach to biodiversity and sustainability is unconvincing. As is the outcome of an ESD strategy.

3A9, 3A10 and 2B17
We note the frequent use of the word 'enhancement' in the above actions concerning the OPW and in this NBAP in general.

3B

3B1 Need to ensure that outdoor recreation strategies are sustainable and that National Parks etc. are managed for biodiversity and not viewed as simply recreation facilities where success is judged merely by visitor numbers.

3C
Irish Businesses are often drivers of damage to our environment caused by their activities and so are responsible for damage to biodiversity and the ecosystem services on which we all depend, so they should indeed fully recognise that they have the primary responsibility for resultant damage.

The need for water filtration and purification largely arises from pollution and the polluter pays principle should be acknowledged.

The ESG approach should not be merely a public relations campaign.

3C2
Enterprise programmes should be assessed for their biodiversity quality.

3C5 - The High-Level National Bioeconomy Implementation Group, under DECC and DAFM, will make recommendations for the sustainable use and protection of biodiversity and natural capital as part of the National Bioeconomy Action Plan and ensure alignment with the National Policy Statement on the Bioeconomy.

3C6 - In line with the sustainability principle set out in the National Policy Statement on the Bioeconomy, the High-Level National Bioeconomy Implementation Group under DECC and DAFM will ensure that feasibility assessments for bioeconomy projects include environmental and social feasibility and that, at a minimum, bioeconomy activities do not reduce resilience or degrade biodiversity and strive towards biodiversity enhancement.

- The above are lofty statements, but to what level does the High-Level National Bioeconomy Implementation Group, under DECC and DAFM have the competence to assess whether bioeconomic activities do not reduce the resilience or degrade our native biodiversity further?
- What does biodiversity enhancement mean here?

This, by definition, is designing nature, and if such bio-enhancers are targeting soil microbes, a route that we take at our peril.

Currently, bacterial strains are being imported into Ireland as bioenhancers and biocontrols for the horticultural industry. Indeed, there is a lucrative industry in ramping up the production of these products in an attempt to replace chemical fertilisers and pesticides, given current public attention focused on these products.

We see this new bioeconomy clearly evident in the DAFM COFORD (Council for Forest Research and Development) document "**Growing the Irish Forest Bioeconomy – 2017**"
http://www.coford.ie/media/coford/content/publications/projectreports/COFORD%20Bioeconomy%20Report%202017-1.pdf

Where the first of 12 proposals for "growing a vibrant forest bioeconomy in Ireland" is as follows:

Proposal 1 - "*Position forestry as a central pillar of Ireland's National Policy on the Bioeconomy*"

Indeed, nothing in these proposals implicitly states furthering research into the understanding of microbes in our forest or woodland soils. The only understanding we are to be provided with is a deeper understanding of the economic, social and environmental benefits of the forest sector, as outlined in Proposal 12.

Proposal 12 - "*Promote a deeper understanding of the economic, social and environmental benefits of the forest sector among the general public though a well-resourced and sustained communications campaign*."

Similarly, we can see it in the mission statement by the **Irish Bioeconomy Foundation** who is developing a National Bioeconomy Campus at Lisheen, Co. Tipperary:
https://bioeconomyfoundation.com/

"Our mission is to promote the conversion of Ireland's natural land & sea resources to high-value products for the development of a sustainable bioeconomy that is globally competitive and creates local development".

As a worrying example of this new bioeconomy, we draw your attention to recent activities in the ancient Brackloon Woodland in Co. Mayo (https://www.coillte.ie/fantastic-fungi/), whereby a Scottish company (Rhizocore Technologies) were invited to Ireland by the Nature Trust, a not-for-profit initiative backed by Coillte, in a bioprospecting exercise to gather fungi from these woodlands to grow on in a Scottish laboratory and return to Ireland. Additionally, we draw your attention to two statements contained in the associated press release:

"*Rhizocore are doing some fascinating work and research into underground relationships between trees and fungi. This is a growing area of research, with new and exciting discoveries being made about these complex relationships between different elements of the natural world*."

"*Rhizocore have an innovative offering in a product containing a tailored mix of fungal mycelia which will help newly planted saplings tap into a natural network of fungi, to enhance the growth of the trees and the carbon sequestration in the soil. Roisin will take away these specimen mushrooms and culture them, first in a solution and then in a growing medium. The inoculated growing medium will then be made into pellets, with one pellet added to the ground with each sapling at the time when it is planted out into a field*."

- What do we know about the impact of distributing these selected combinations of strains of fungi?
- Do we even have sufficient taxonomic information to determine whether these strains were originally indigenous?
- Who will own the intellectual properties associated with this activity?

It is well recognized that we have a very limited knowledge of soil microbial activity, either at the species level let alone the ecological interactions contained within. Indeed, the above press release acknowledges this.

With increasing funding to universities by corporate interests in the bioeconomy, Ireland urgently needs independent national taxonomic expertise in fungi, and to integrate people with long-term historical knowledge of the species diversity, known interactions and biogeography of this group.

- To what extent does the High-Level National Bioeconomy Implementation Group under DECC and DAFM contain this expertise?
- Mycological taxonomists and researchers with both national and global expertise already exist in Ireland. Are they included in this working group?
- Have DECC, DAFM or indeed the NBDC got such staff employed?
- How, therefore, are they competent to assess the effects of bioeconomic actions on nature and biodiversity in Ireland?

3C7 Need for appropriate training for ecologists in biodiversity identification and providing reports that assess biodiversity sustainability and not just fulfil bureaucratic requirements. Quality is more important the number educated/trained. Review the curriculum/activities of primary and higher degree programmes.
Indicators D.5.ii etc. should be included, i.e. enforcement measures.

3C8 The Origin Green programme needs to be replaced by a programme with genuine understanding of sustainability and biodiversity.

3C9 Business must be genuinely sustainable and not pay lip service to the idea of reducing their impact on biodiversity. D.5.x indicators?

3D1 Why destroy our natural environment and commission the OPR to condone this destruction and encouraging a so-called best practice of integrating green infrastructure, nature-base solutions and ecosystem services.

Objective 4

Embed Biodiversity at the Heart of Climate Action

This document apparently fails to understand that invasive species may not be the major threat caused by climate change. Climate change will have a large impact on our natural habitats and species that have survived the major loss of habitat may well be finally driven to extinction by inability to adapt. Carbon dioxide and methane emissions will continue to rise unless *direct measures* are taken for reduction. More indirect methods such as tree planting as a crop will not be sufficient to offset. In general, offsetting is not proven to be an effective alternative.

4A2 Research on the impacts of climate change on biodiversity will not prevent on-going biodiversity loss. We cannot afford to await the outcomes of such research.

4B1 "Rehabilitation" by wetting will not restore lost peatland biodiversity which has taken thousands of years to develop. Different plant and animal communities will develop.

4B2
What or who is a biodiversity representative in this context? If biodiversity is truly mainstreamed then everybody should be a representative.

4B3
Self-monitoring? How can a monitoring programme which monitors a biomass programme which allegedly both maximises benefits for biodiversity and simultaneously minimises of eliminates negative impacts on biodiversity.

4C/2
Need to define and catalogue Nature-based solutions and to evaluate whether these solutions actually fulfil their claims. Prevention of impact problems approach is superior to solutions of doubtful effectiveness. Level of funding is not a good indicator of success.

Analysis and solution to pollution of problems needs to be in place before any attempt at restoration.

4C3 Degree of implementation of the National Raised Bog Special Areas Conservation Management Plan 2017 – 2022. It appears that this plan should be implemented by 31 December 2022 prior to the period of the draft action plan?

Objective 5

Enhance the Evidence Base for Action on Biodiversity

What is the assessment of the current evidence base? The appended references to the Draft do not provide support the actions.

The approach seems to be let us do more research. While more research is always needed, there needs to be a thorough evaluation and justification for more funding for the research community, as an end itself, rather than gathering targeted evidence-based information on biodiversity; and putting in place programmes for scientific evaluation of the state of habitats and their ecosystems.

There can be no sound basis for a biodiversity action plan in the absence of substantive monitoring programmes.

Citizen Science data collection should endeavour to supplement an effective monitoring data collection programme rather than attempting to simulate one.

Why does Teagasc not already have a dedicated research programme on agricultural biodiversity in place rather than unsubstantiated schemes with elements of unproven actions for biodiversity e.g. hedgerow disturbance and uncorroborated schemes such as Acres which are being main-streamed?

Citizen Science vs. critical skills needed to address the biodiversity crisis

We note the following two actions referring to increased capacity to address biodiversity research gaps and skills (Outcome 5A) and Biodiversity initiatives which are inspired and supported across the whole of society (Outcome 1D):

5A1 - An application will be made by relevant organisations to the Expert Group on Future Skills Needs to conduct a review of skills needs to address the biodiversity crisis e.g., ecologists, taxonomists, and biodiversity data experts.
Timeline: By 2026, a review of biodiversity skills gaps is complete (conditional on an application made to the EGFSN)
Indicator: Completed application to Expert Group on Future Skills Needs; Decision of EGFSN to complete assessment; Actions taken to address skills gaps (conditional on acceptance and completion of assessment);

1D4 - The NBDC will produce and implement a Biodiversity Citizen Science Strategy to promote citizen engagement with both terrestrial and marine biodiversity and to develop greater awareness of the value of local biodiversity.

> Timeline: By 2024, a Biodiversity Citizen Science Strategy is published and in progress
> Indicator - Publication of and progress against Biodiversity Citizen Science Strategy; National Biodiversity Indicators (NBI)- A.2.iii. Number of biological records submitted to national citizen science-driven monitoring schemes

We note that the timeline for completion of a biodiversity skills gaps review is 2026, and also that this skills gap review is contingent on successful application to the Expert Group on Future Skills Needs. Compare this to the timeline for progressing and publishing a Biodiversity Citizen Science Strategy, which is 2024.

Additionally, we note the following in the Interim Review of the Implementation of the **National Biodiversity Action Plan 2017-2021** published in February 2020 with relation to **Objective 2 – Action 2.1.11 of the last NBAP** "Build and maintain the human resources, systems and infrastructure needed to identify, obtain, collate and curate the biological specimens that are the basis for taxonomic knowledge through training programmes". **S**

It is pertinent to ask the following here:

- What taxonomic expertise in relation to the flora, fauna and fungi of Ireland, their biogeographical and landscape contexts, resides in the NBDC to guide the initiatives outlined?
- Given the rapidly increasing interest in the bioeconomy, what mycological taxonomic expertise resides in any of these institutions, with relevant knowledge of the study of mycology in Ireland, species diversity, interactions and biogeographical context?

We point you to the following in the Global Taxonomy Initiative Forum 2020 - Call for action on recognizing the critical role of taxonomy to underpin transformative change within the post-2020 Global Biodiversity Framework:

https://www.cbd.int/gti/doc/gti_forum_2020_statement.pdf

*"**Taxonomy is the fundamental scientific discipline underpinning biodiversity discovery and understanding**. As such, attainment of the goals of the Global Biodiversity Framework depends on effective action both to maintain and strengthen long-established taxonomic expertise, and to support the many innovations enabling unprecedented discovery of the Earth's biodiversity as well as the sharing of data and information to support conservation and sustainable development.*
***Taxonomy must be recognized and fully integrated into all components of the Global Biodiversity Framework.** This includes, but is not confined to:*

- *The 2030 action targets of the framework*
- *The implementation support mechanisms of the framework, especially capacity development, technical and scientific cooperation, and knowledge generation*

***Development of capacity in taxonomy is critical to the successful implementation of the Global Biodiversity Framework**. This includes support for developing taxonomic infrastructure and capacity in all countries and regions, and for ensuring that such skills are passed to new generations, to underpin and enhance understanding of biodiversity in all places on Earth. Increased investment in education, training and career opportunities in taxonomy is urgently needed to prevent an overall decline in taxonomic research, and to promote continued expertise and taxonomic literacy among younger professionals and future generations engaged in conservation."*

Can it be explained, why in this NBAP, no sense of urgency is given to the well-recognised lack of taxonomic expertise in the flora, fauna and fungi of Ireland at higher level education level?

Indeed, we identify a number of actions in this NBAP which refer to support for Citizen Science initiatives. For example:

5C - Recognising the importance of long-term monitoring for biodiversity action, and the need to fulfil our national, regional, and global reporting obligations, this Outcome proposes actions to continue monitoring efforts and to assess the effectiveness of biodiversity measures. The valuable contributions from citizen science **programmes and volunteer data projects will also be supported**.

5C3 - The contribution from citizen science to support biodiversity monitoring will be supported by all relevant organisations

5C9 - The NBDC will, with relevant state partners, devise and undertake a systematic baseline survey for priority invasive species and hot-spot introduction sites with subsequent monitoring. This will be state-led and supported by Citizen Science engagement programmes.

2F12 - DHLGH will build, enhance and support biodiversity information and data gathering and archiving by Citizen Science initiatives conducted around Ireland's coastline and in inshore and offshore waters.
What of the actions under this outcome will help to facilitate knowledge generation from the plethora of data of mixed quality collected by citizen science initiatives?

We urgently need a national inventory of taxonomists knowledgeable of the flora, fauna and fungi of Ireland, and more importantly, their biogeographical context and relevance in the landscape. This needs to be carried out in all the higher-level institutions to determine to what level a connection still exists with the biogeography of Ireland and the ability to pass this knowledge on to future generations. Similarly, taxonomic and biogeographical expertise amongst various state-funded agencies and actors, with responsibility for protecting our native biodiversity or other biodiversity initiatives, including NPWS, National Botanic Gardens, National Biodiversity Data Centre, DAFM, OPW, Natural Capital Ireland, Businesses for Biodiversity needs to be assessed. Otherwise, we run the risk of operating in an information vacuum. Collection of this data should be a simple clerical exercise.

What has happened to the **Prioritised Action Framework (PAF) 2021-2027** (listed under acronyms) which identifies Ireland's priorities for habitat and species protection and restoration in Special Areas of Conservation and Special Protection Areas, and associated green infrastructure?

https://www.npws.ie/news/prioritised-action-framework

5B Data relevant to biodiversity and ecosystems, including conservation needs, is widely accessible and standardised.

Has the NPWS not got this data and the facility to release it?
Role of EPA, OPW, NBG?

5B5 DAFM will work towards establishing a national research forum dedicated to **sustainable food systems and forestry by end of 2025.**

This requires elaboration.

5C1 A site-based monitoring programme to monitor changes in biodiversity over time will be **developed** by 2024. Evaluation and Implementation date?

Does the NPWS not currently monitor SACs? What is the "evidence" used for Article 17 reports?

5C2 Collaboration on biodiversity monitoring.

More work needed on reporting requirements.

5C3 Citizen Science monitoring of habitats and species listed on EU Nature Directives will be continued and enhanced.

This needs elaboration / explanation. Not a substitute for scientific evaluation.

5C4 All listed species should be monitored given the relatively small number of Protected Species.

5C5 Heritage Council …. Habitat mapping for urban conditions
More elaboration needed.

5C6 Red Lists
What is the function of Red Lists?
Should they not be put to use, rather than tracking extinction dates?

5C8 NBDC …… knowledge gaps.

Is this information not already available to the NPWS.

5C9 Priority Invasive Species monitoring and NBDC.

Has this not already been done?

5D Ireland has prepared national assessments of ecosystems serviced and natural capital.

To what end and purpose?

5D1, 5D2, 5D3 Network of experts in Natural Capital and Ecosystem Accounting to be established.

This suggests that the intention may to trade our biodiversity (natural capital). It assumes that this model has a usefulness or proven validity in relation to biodiversity protection, rather than a business and academic exercise.

5D4 Habitat biodiversity assessments on all National Farm Survey farms by 2030.

Assessments in themselves will achieve little. What application will they have. Important to avoid the importation of unsuited pre-existing models such as *Acres.* The criteria demand expert and objective review. Unless a baseline has been established for reference, outcomes will yield little valid information on impact of revised CAP funding on biodiversity. Do DAFM, Teagasc and NBDC have the capacity to ensure genuine habitat biodiversity assessments on NFS farms? What is the methodology proposed?

5E Biodiversity is mainstreamed across relevant research disciplines such as STEM, humanities, engineering….

Needs elaboration.

Objective 6

Strengthen Ireland's Contribution to International Biodiversity Initiatives

There is little biodiversity justification in signing up to new initiatives given Ireland's failure to live up to agreements already signed. We would like to see an approach that commits Ireland to full implementation.

The Dublin Naturalists' Field Club

Promoting nature in Ireland since 1886

The Dublin Naturalists' Field Club promotes the study and conservation of the natural environment, its species, habitats, underlying geology and landscape. It provides opportunities to learn about and share information on all aspects of natural history and it encourages and seeks to assist in the conservation and protection of sites of ecological interest.

Activities

Outdoor field meetings and indoor workshops and presentations are held throughout the year, mostly in the greater Dublin region. Many of our events are conducted by leading Irish and visiting naturalists. They cover natural history topics from the wild plants, birds and insects, to the geology and ecology that make their lives possible.

Principal aims

The principal aims of the Field Club are:

- to provide opportunities for people to share their interests in all aspects of natural history
- to offer activities that raise awareness of and promote interest in our natural heritage
- to train and educate naturalists of all ages and experience
- to protect rare and endangered plants, animals and habitats
- to promote the conservation of sites of natural history interest
- to carry out specialist surveys of flora and fauna
- to provide input to local and national authorities on nature conservation matters

History and publications

The Dublin Naturalists' Field Club was founded in 1886 and early members included Nathaniel Colgan (1851–1919) author of *A Flora of County Dublin* and Robert Lloyd Praeger (1865–1953) whose publications included *Irish Topographical Botany* and *The Way that I Went*. Other significant publications include the *Flora of the County Wicklow* by J.P. Brunker (1950), *Flora of County Dublin* by DNFC members (1998), *The Flora of County Cavan* by P.A. Reilly (2001), *A Catalogue of Alien Plants in Ireland* by Sylvia Reynolds (2002), *Irelands' Butterflies: A Review* by David Nash, Trevor Boyd and Deirdre Hardiman (2012) and the *Flora of County Limerick* by Sylvia Reynolds (2013).

Conservation

In view of the continuing loss of natural habitats, we felt obliged to form a Conservation Sub-committee in 2018 to review, prepare and disseminate evidence-based commentaries on the current conservation status of species, sites and habitats; to consider the content and effectiveness of various local and national biodiversity plans; and to convey its opinions, through discussion and written submission, to parties concerned with the implementation of these plans.

Our first Position Paper was produced in 2021 entitled 'The Case against Wildflower Seed Mixtures'.

Details of members of the Conservation Sub-committee are listed below.

DNFC Conservation Sub-committee

Current sub-committee members (November 2022), with selected publications

Declan Doogue

N.T., Ph.D., F.L.S., Hon. V.P. DNFC, Hon. Member B.S.B.I.

Organiser of the all-Ireland terrestrial Isopod Mapping Scheme (An Foras Forbartha / Irish Biological Records Centre), the BSBI Atlas scheme for the Republic of Ireland 1990-2000 and the DNFC Flora of County Dublin re-survey. BSBI recorder for Kildare (H19). His academic interests include the biogeography of floristic/habitat relationships, the importance of the Irish hedgerow network, countering the loss of field skills and taxonomic expertise and the history of Irish botany. Conservation interests include the factors affecting the flow and interpretation of site information to Local Authorities and the capacity of these bodies to have due regard to their responsibilities for the implementation of enduring habitat protection measures. He is currently researching the botany of Ireland in the 18th century and the taxonomy of *Taraxacum*, *Rubus* and *Rosa.*

Doogue, D. (1994) *The composition of the hedges of Leinster, Ireland, with particular reference to the taxonomy and ecology of the genus* Rosa *Linnaeus*. Ph.D. Thesis, Botany Department, Trinity College Dublin.

Doogue, D., Nash, D., Parnell, J., Reynolds, S. & Wyse Jackson, P. (Eds) (1998) *Flora of County Dublin*. The Dublin Naturalists' Field Club, Dublin

Doogue, D. & Krieger, C. (2010) *The wild flowers of Ireland: the habitat guide*. Gill and Macmillan, Dublin.

Rosaleen Fitzgerald

B.A., B. Phil.

Rosaleen is a retired Civil Servant (Revenue, Justice). She is DNFC Programme Secretary. Her field recording expertise was formed as district recorder and contributor to *Flora of County Dublin* re-survey (DNFC) and she was appointed BSBI Recorder for South Tipperary (H7) where she made substantial contributions to the *New Atlas of the British and Irish Flora (*BSBI 2002) and its on-line update.

Her research interests include the taxonomy of critical groups especially *Taraxacum*. She maintains an interest in other critical genera (such as native endangered *Hieracium* taxa) and is currently validating records included by J.P. Brunker in the *Flora of the County Wicklow.*

Philip Grant

B.A. (Mod.) Natural Sciences (TCD)

Philip is a graduate of the Botany Department of Trinity College Dublin. A field botanist with over 30 years' experience, he has worked on Irish vegetation and floristic publications at national, county and local level. Following university, Philip became a diplomat in the Irish Department of Foreign Affairs, stationed in countries in North America and in the Middle East. During his postings abroad, he has widened his expertise and knowledge of the habitats, vegetation and species of these regions and applied that knowledge on his return to Ireland. Philip most recently served as Irish Consul General in San Francisco, covering the western United States; and as Director of Communications at the Department of Foreign Affairs in Dublin. Philip is the representative of the Field Club on the recently established Advisory Forum for the Bull Island Nature Reserve in Dublin.

Melinda Lyons (Chair)

B.A. (Mod.) Natural Sciences. Ph.D. Natural Sciences (Botany, TCD)

Melinda is a botanist and plant community ecologist with interests in nature conservation, habitat management, biogeography, bryology and vegetation analysis. Her Ph.D. was awarded for an investigation of the plant communities, syntaxonomy and ecology of petrifying springs — a Habitats Directive Annex I priority habitat. More recently, she carried out a detailed study of the rare plant species and habitats of high nature conservation value on North Bull Island for Dublin City Council. She lectures in TU Dublin and is chair of the BSc in Environmental Management. She is Vice-County Recorder for Dublin (H21) for the British Bryological Society.

Lyons, M.D. (2020) *The flora and vegetation of North Bull Island, Dublin Bay*. Unpublished report to Dublin City Council.

Lyons, M.D. & Kelly, D.L. (2017) Plant community ecology of petrifying springs (*Cratoneurion*) – a priority habitat. *Phytocoenologia* **47**:13–32.

David Nash

B.A. (Mod.); B.Sc.; M.A.; Ph.D.; H. Dip. Ed; M.I.C.I.

Senior Inspector (retired) Department of Education & Skills. Long-time member of the *Botanical Society of Britain and Ireland* (BSBI) and offices held include Field Secretary and Ireland representative on Council. BSBI Vice-County Recorder for North Tipperary (H10) and Dublin (H21) and data facilitator and contributor to Atlas 2000 and the forthcoming 2021 Atlas. Member of *The Dublin Naturalists' Field Club* with offices held including President and Hon. Secretary. Director of *The Irish Naturalists' Journal Ltd*. Ran a national recording scheme for all Ireland's butterflies and mapped the data at a 10 km level. Co-ordinated and provided data for the *Millennium Atlas of the Butterflies of Britain and Ireland*, Butterfly Conservation (UK) (2002).

Doogue, D., Nash, D., Parnell, J., Reynolds, S. & Wyse Jackson, P. (Eds) (1998) *Flora of County Dublin*. The Dublin Naturalists' Field Club, Dublin

Nash, D., Boyd, T. & Hardiman, D. (2012) *Ireland's Butterflies A Review*. The Dublin Naturalists' Field Club, Dublin.

Charles Shier

B.Sc. Botany (Durham), M.Sc. Landscape Ecology (London), M.Sc. Management (TCD)

Charles is a retired executive with Bord na Móna. He spent over four decades working with peatlands: initially in conservation and research on the uses of cutaway peatlands; then in commercial roles in the energy and horticultural sectors; and latterly in the establishment of renewable electricity generating assets on cutaways. His interests include quaternary ecology, peatland formation and rehabilitation, forests and woodlands, land use and carbon fluxes. He is a former President of the DNFC and is its current Honorary Secretary.

Shier, C. and McNally, G. (1985) Changing Peatland Landscapes. In: F.H.A. Aalen (Ed) *The Future of the Irish Rural Landscape.* Trinity College Dublin, 154-172.

Shier, C. (1996) The Peat Resources of Ireland. In: E. Lappalainen (Ed) *Global Peat Resources*. International Peat Society, Jyväskylä, Finland, 95-100.

Shier, C. (2008) The co-firing challenge: the use of biomass in peat-fired generating stations in Ireland. *Proc. 13th Intl. Peat Congress*, Tullamore. International Peat Society, Jyväskylä, Finland, 133-136.