Our Case Number: ABP-318446-23

Planning Authority Reference Number:

An Bord Pleanála

Brian Walsh
Kilkeany
Ballymacarbry
Co. Waterford
E91 KF88

Date: 29 January 2024

Re: Proposed construction of Coumnagappul Wind Farm consisting of 10 no. turbines and associated infrastructure.
In the townlands of Coumnagappul, Carrigbrack, Knockavanniamountain, Barricreemountain Upper and Glennaneanemountain, Skeehans, Lagg, Co. Waterford.
(www.coumnagappulwindfarmSID.ie)

Dear Sir / Madam,

An Bord Pleanála has received your recent submission in relation to the above mentioned proposed development and will take it into consideration in its determination of the matter. Please accept this letter as a receipt for the fee of €50 that you have paid.

The Board will revert to you in due course with regard to the matter.

Please be advised that copies of all submissions / observations received in relation to the application will be made available for public inspection at the offices of the local authority and at the offices of An Bord Pleanála when they have been processed by the Board.

More detailed information in relation to strategic infrastructure development can be viewed on the Board's website: www.pleanala.ie.

If you have any queries in the meantime, please contact the undersigned officer of the Board or email sids@pleanala.ie quoting the above mentioned An Bord Pleanála reference number in any correspondence with the Board.

Yours faithfully,

PP HCM

Niamh Hickey
Executive Officer
Direct Line: 01-8737145

PA04

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Observation for case number 318446

I am sure like most people, I am not against renewable developments in principle but they do need to be considerate of the associated impacts which they may cause.
I have not objected to any planning or development before in my life and I am only submitting this Observation as I feel so strongly about the proposed plan and the affect it will have on the rich biodiversity of the upland mountain habitat.
This application by EMPower can be summed up as too big, too late and in the wrong place.
Ireland declared a Biodiversity Crisis in 2019 in recognition of the fact that we could not afford to stand by and continue to watch the destruction of habitats.
This was a welcome measure but more important than words are actions. We need to stand by this directive and do what we can to save what little we have, before it's too late. We can make electricity and we can save energy but once biodiversity and species are lost they are lost for good. There is no recreating what we have destroyed in the name of green energy. Climate change and biodiversity protection need to work together and be balanced. This is a prime example of where one seriously out weighs the other.

https://www.irishtimes.com/environment/climate-crisis/2022/11/17/biodiversity-and-climate-crises-must-be-addressed-in-tandem/

Afforestation, onshore and offshore wind farms and greenways are essential actions on climate mitigation and Ireland has ambitious targets in these areas. Done properly these much-needed developments present a win-win for communities and the environment. Done badly and they risk worsening biodiversity loss and alienating local communities.

The above paragraph sums up the situation.

If this project goes ahead we will be taking a step backward, not forward, as it will be sending out the message to developers that the County Development Plans of County Councils can be ignored and they will encroach even further into designated "NO GO AREAS".

This type of project creep is already on the cards for this development if it gets the go ahead, the Coumnagappul Extension Plan will be introduced and before you know it, the area from the the Comeraghs to the Knockmealdowns will be an Iron curtain of Turbines.

This is not scaremongering, EMPower, the Applicant has a development at planning stage with An Bord Pleanala, Dyrick Hill wind project, which is only a few kilometres away, less if an extension to this project goes ahead. Then there is Scart turbine project which is adjoining Dyrick hill Project and which continues up the Knockmealdowns towards Mount Melleray.

This attempt to cover the whole area in small projects amounts to one large project by many names, death by a thousand cuts for our precious habitats.

It is not about whether I or anyone else likes Turbine or agrees with them. The issue is it is not our habitat to destroy. The wildlife, flora and fauna of this area are under enough pressures as it is without increasing it, and attempting to mitigate possible destructive issues by measures which can not be guaranteed to work.

It is time we start to realise it is not ours to destroy and that we have an obligation to protect what is left of our valued biodiversity for their sake and for our own future generations. Lets give them a chance.

In regards to this development, a simple message should be sent,

NO GO AREA, means, NO GO AREA.

Thank you in advance for taking the time to read this observation and please remember that while the Applicant has money and time on his side, I only have my passion and experience of living in this area and have done the best I can to outline my many concerns with the limited time and resources available to me.

My concerns in relation to project:

Special Area of Conservation.

This industrial scale development is right alongside the largest SAC in Waterford.
Despite this, the Applicant, in the screening report has decided that it will not be affected and therefore to not include it for analysis in the EIAR.
It is obvious to anyone who knows the area that the land in the SAC and the land in the project are one in the same in relation to Biodiversity value.
When this SAC was first created by the NPWS the wish was to include the complete mountain uplands area, but due to political pressure and landowners concerns it never happened.
There was no decision made on the quality of one over the other, all was seen as equally rich in biodiversity, it was only a matter of having to draw a line somewhere. This is similar to today, where as you walk the mountains here you would not notice you have passed from a SAC or not. It is a line on a map which has no consequence to the flora and fauna of the area.
In an ideal world it would all of been included and we wouldn't be having this issue.
Unfortunately that is not the case and we have the sad situation of the Applicant trying to persuade you that the area which this project will impact is of little to no natural value.
I have a serious issue with this idea and especially with the manner in which they came to this conclusion.
Firstly, the criteria for selection in the screening report is as follows,

3.2 Identification of European Sites That May be Affected by the Project European Commission Notice (2021) on the 'Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC, states that in identifying European sites (Natura 2000 sites) which may be affected by the project, the following should be identified:

1. Any European sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;

2. Any European sites within the likely zone of influence of the plan or project. European sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the project, including as regards the use of natural resources (e.g., water) and various types of waste, discharge or emissions of substances or energy;

3. European sites in the surroundings of the plan or project (or at some distance) which host fauna that can move to the project area and then suffer mortality or other impacts (e.g., loss of feeding areas, reduction of home range);

4. European sites whose connectivity or ecological continuity can be affected by the plan or project.

Now, I am not an ecologist but these guidelines seem quite straightforward to me and yet somehow the Applicant was able to dismiss any possible concerns on the connecting SAC by two short lines in their screening report:

No Annex I habitats within the Site, no hydrological connectivity between the Site and the SAC.

Upstream from any hydrological/ hydrogeological connectivity to TDR and GCR.

That's it. The complete appraisal of the SAC which is 0 .74 km away from a turbine and adjacent to it, two lines!
Surprisingly, they managed a small paragraph on the other Natura 2000 concerns that were anything up to 15km away.
It would appear they are taking a gamble in trying to exclude it straight away from the EIAR as they know it will be impossible to mitigate against the consequences of this project on the protected environment.
Surely reading the criteria above it would be obvious that the SAC would need to be studied and included in the follow up EIAR.

For example:
The first point clearly states that if any of the actions or aspects of the plan overlap with the European site OR ARE ADJACENT TO THEM.
It is adjacent to a European Natura 2000 site.

The second point is also clear. The European site is located in the surroundings of the project (not even at some distance) and will obviously be affected by aspects of the project, including water. The area is a bog and any activity, especially digging turbine foundations, roads and borrow pits will have a negative affect on the adjacent site causing untold damage to Annex 1 habitats, which they have ignored.

The third point is very simple and again one would assume that the Applicant is aware of this, of course there are fauna that use the Nature site and and move into the projects included area. The wildlife are unaware of this boundary, but they will become very aware of it if this goes ahead. There will be a loss of habitat, feeding areas and a reduction of home range, also a good chance of mortality or injury, during construction and operation.

The fourth point is enough on its own to warrant a full EIAR and I'm beginning to wonder how they expected to get away without including the Comeragh SAC.
It is worth repeating,

4. European sites whose connectivity or ecological continuity can be affected by the plan or project.

Now please, in what world can a development of this scale take place on the side of a mountain, on a bog beside a Natura 2000 site of similar landscape and biodiversity value and there not be a loss of connectivity or continuity caused by the project?

This screening report is a cynical attempt to cover up the biggest threat to the project, they are busy explaining the importance of the other distant sites, which have also legitimate concerns and how they will mitigate for them hoping we won't notice the obvious. A poor mans' three card trick.
Don't be fooled and please don't let them destroy our valued mountains and upland areas.

Habitats

Annex 1 areas will be affected, unlike as stated by the applicant in their screening report, later in EIAR they admit Annex 1 will be affected but counter that by stating it is poor quality, over grazed and burnt. Also they stated that they were unable to access some of the area as it was burning and at another point said the area was inaccessible as it was to steep? It's a mountain, therefore who did they send up to access it, that they thought it was steep and then decided to not go any further and had a guess what the habitat and terrain was like. Are these people for real? I have to question the professionalism of this report and their attempts to find anything of value on our mountains.
It would appear they are best suited to desk top studies and desk top studies are best suited to people who don't want to acknowledge what is really in situ.
It seems their attitude is ,it has been abused already so we can keep abusing it, this is in direct violation of habitat directive, which calls for Habitat restoration not destruction. Two wrongs do not make a right.
The Turbines and a large percentage of the roads are positioned on an area that is mapped as blanket bog, the Applicants attempts to downplay this and ignore the implications this will have on the habitats involved.

Turbines T2, T7, T8, T10, T11 and T12 and portions of the access roads linking these turbines are all located in
areas mapped as having a 'Moderately High' to 'High' landslide susceptibility. These areas directly correlate
with mapped Blanket Peat deposits. Field observations at these locations recorded slope angles ranging from 6
to 15o and peat depths of between 0.2 and 0.3m with no evidence of historic slope instability observed. In

addition, desktop review of available aerial photography did not identify evidence of slope instability. It is
therefore considered that the risk of landslide at the turbine locations and along the access tracks is considered
to be negligible and that the GSI Landslide Susceptibility Classification rating at these locations does not
accurately reflect actual ground conditions encountered on site i.e. shallow peat or complete absence of peat
deposits.

https://gsi.geodata.gov.ie/downloads/Geoheritage/Reports/WD016_Comeragh_Mountains_Overview.pdf

"Founded in 1845, Geological Survey Ireland is Ireland's public earth science knowledge centre and is a division of the Department of the Environment, Climate and Communications.

We are committed to providing free, open and accurate data and maps on Ireland's subsurface to landowners, the public, industry, and all other stakeholders, within Ireland and internationally."

EMPower have gone so far to say that the GSI are incorrect in their evaluation of the area, and therefore EMPower have decided to reclassify the ground conditions to something more suited to their needs.

The Applicant mentions they are using guidance from the Scottish Executive – Peat Landslide Hazard and Risk Assessments (2017).
https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2017/04/peat-landslide-hazard-risk-assessments-best-practice-guide-proposed-electricity/documents/00517176-pdf/00517176-pdf/govscot:document/00517176.pdf

By looking at the guidelines, I don't think they followed them in relation to the amount of surveying they did on the site. EMPower focused on the turbine sites and borrow pits, and failed to extend their survey further afield, which is required.
The Scottish guidelines also include this statement in their remarks about site suitability and risk assessment.

The approach is relatively easy to apply where there is a historical record of landslides. However, this approach assumes that conditions in the future correspond to conditions in the past, which is not necessarily the case, for example, the construction of a wind farm

may elevate likelihood of landslides through alterations to natural drainage pathways.

There is nothing simple about this project and the length of time it took EMPower to put this project forward for planning reflects that. It has been over four years now and they still have not got it right. It just isn't the right place for it, but they keep trying as they have invested in the project and are loathe to see it fail.

Under the Waterford City & County Development Plan 2022-2028, any development which will affect or destroy peatland or bog needs to have a Carbon emissions assessment done.

https://storymaps.arcgis.com/stories/c405cfe0213145f589ceb44de1a1624f

This project which the Applicant will have us believe is saving us from Climate Change will probably have a net Carbon gain due to its situation on blanket bog.

I know the Peat Conservation Council of Ireland have issues with the Applicants' apparent disregard of the upland bogs. I hope you will help us in letting the Applicant know that this is unacceptable behaviour and that you cannot reclassify geology as you so desire.

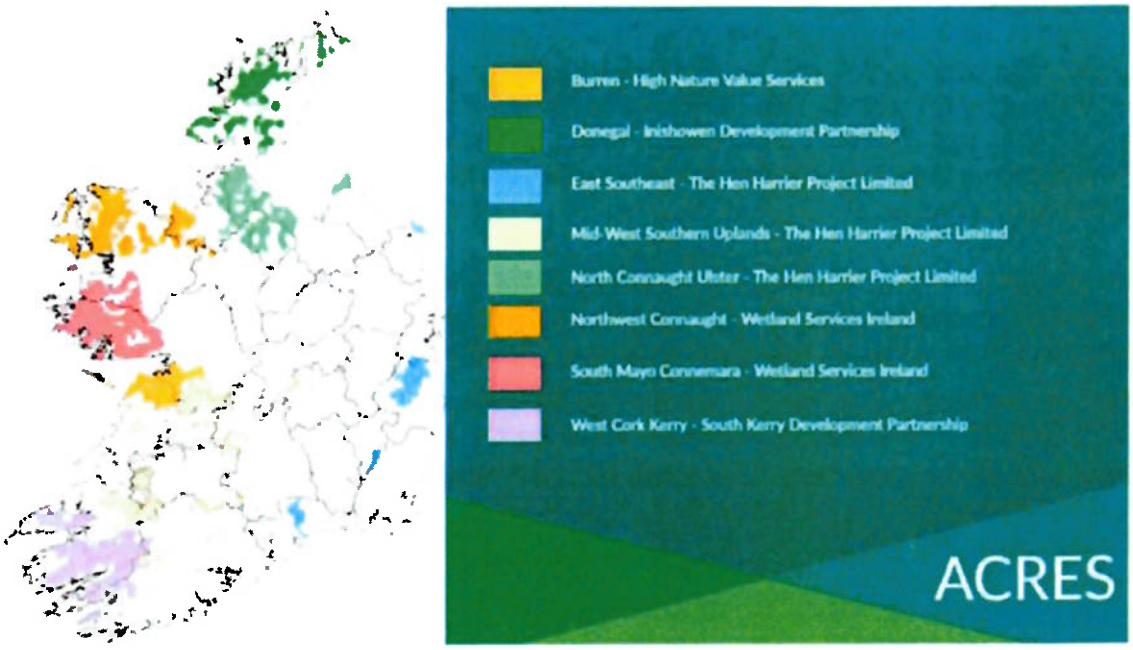
Another reason why this project seems completely unsuited to this area, is the fact that all of the area concerned, and the surrounding lands are part of the new ACRES scheme opened recently by the Department of Agriculture and backed by European CAP money.

They are in fact part of the Cooperation Zone, there are only eight of these areas around Ireland, chosen for their high Biodiversity value and the project aims to help farmers preserve and improve the habitats involved.
These co-operative project zones include areas dominated by semi natural vegetation (Both privately owned and in Commonage), Natural 2000 lands, and priority water catchments.

These zones are recognised as having high-nature value; holding significant carbon stores; and as the location of "some of the most pristine waters in the country" according to the Department of Agriculture, food and the Marine.

These areas were grouped into eight CP zones, based on the geographical area and number of potential scheme applicants in those areas.

These eight zones are outlined in the map below:



The eight CP zones are: Burren; Donegal; East-Southeast; Midwest-Southern Uplands; North Connacht-Ulster; Northwest Connacht; South Mayo-Connemara; and West Cork-Kerry.

Outstanding Planning issues

After having dealings with the Applicant and finding them untrustworthy and dishonest I started to pay more attention to any activity around the mountain.
In January 2022, I noticed that there was a large track machine digger and other large machinery up on the mountains by Coumnagappul and Knockavannia.
When I investigated, it turned out to be the Applicants or their agents working on the site with the digger and digging large test holes and doing core drilling.
I enquired what they were doing and expressed my concern about it, they were amicable but not very informative.
I later contacted Waterford County Council and made an Unauthorised Development (UD) submission in relation to this digging and disturbance.
Normally a decision or answer is made within a month or two under guidelines.
I have made numerous attempts to get a decision regarding this UD 3515 and yet here I am a year later and nothing. I wanted to have a decision before I had to put in this Observation but despite numerous attempts at contacting the planner involved by phone and email I have received no news back.
I have heard from a friend that there is also another UD outstanding in relation to this development to do with the mast. How is it these issues can go on so long without satisfactory resolution?
I find it hard to understand that the applicant can make a submission to ABP while these UD cases remain outstanding, is this allowed or normal?
I would ask you to look into these cases and please take them onboard regarding your decision making.

Project splitting and expansion project

When the applicant sends in their application it is for 10 turbines and all of the works carried out in relation to this project such as the EIAR and Screening Assessment are based on the assumption that there are 10 turbines in the area.
Dyrick hill is still with ABP awaiting decision, but is still noted and discussed in this application as a possible cumulative impact on the environment.
What isn't discussed or mentioned is the fact that the applicant EMPower has already got plans well underway for the Coumnagappul Extension Plan as it was called by Brian O'Shea from EMPower over a year ago.
I was offered a contract and a possible turbine on my field which is alongside the Coumnagappul project, which is discussed later below.
The ornithology study is ongoing up there as I type this and has been for the last year or more.
The land owners involved in this project are some of the same as involved in the Extension project, Coilte and Sheehans are two of the main landowners, providing approximately 200 acres or more. The rest of the land owners that have signed up would probably bring the total area to approximately 400 acres.
Unfortunately, I have only approximate figures as not all of the landowners are making the deals known but some are.
This would bring the Coumnagappul project further along Knockavannia and further west, across the road, (which was why they approached me for land) into Coilte and Sheehans woodland, and further into Castlereagh and toward the main Clonmel to Dungarvan road.
This would mean it would only be a few kilometres from the Dyrick project and would be creating a physical border on the landscape from the foothills of the Knockmealdowns to the foothills of the Comeraghs.

The argument which will be put forth by the applicant that Waterford County Council is lagging behind on its Climate Change commitment for renewable energy can be answered as before, one cannot be saving the climate while destroying the environment. Ireland declared a Biodiversity crisis in 2019. The loss of biodiversity through the loss of peatlands and wetlands will in turn increase emissions from the land use sector, demonstrating the need to put biodiversity at the heart of climate action.
Also there are many plans which are already well underway for Turbines off shore from the Waterford coast. If only a fraction of these come to fruition in the coming years they will surpass the requirements for the county and its climate commitment.

This is from the recent development plan in relation to SAC and any projects in there proximity.

Protection of European Sites

BD 05

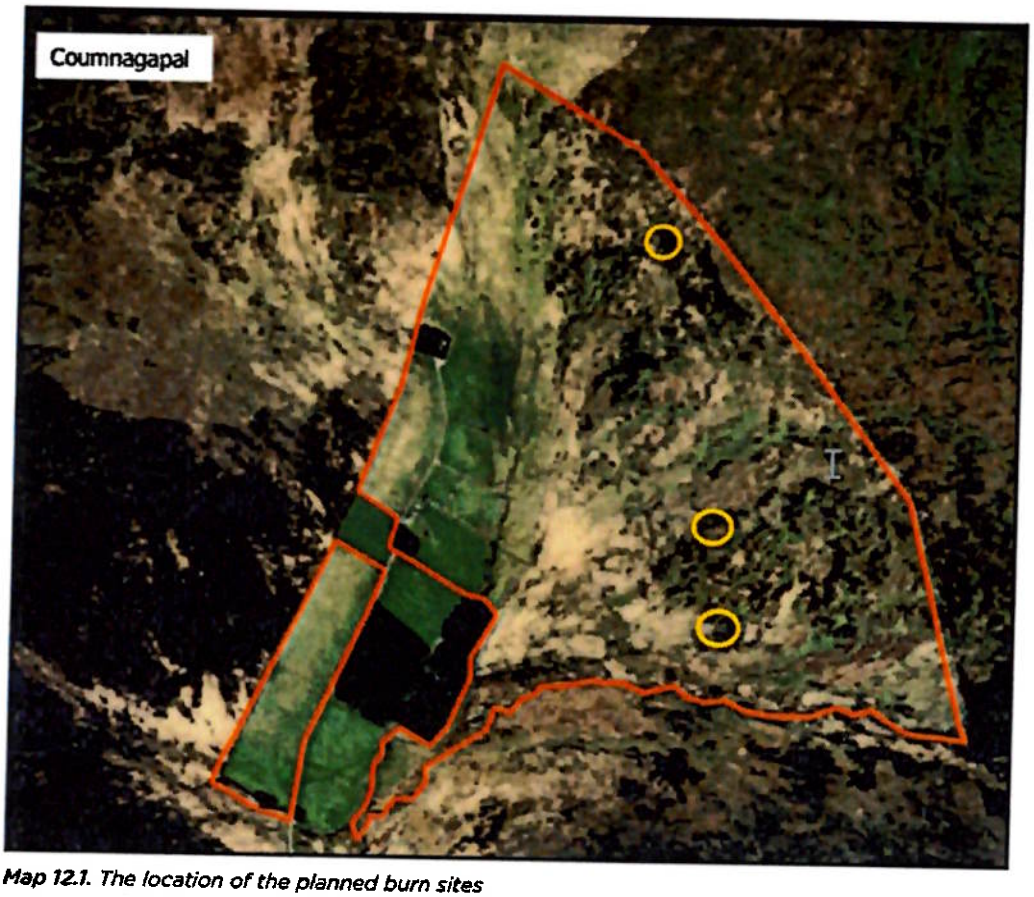
Projects giving rise to adverse effects on the integrity of European sites (cumulatively, directly or indirectly) arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall not be permitted except as provided for in Article 6(4) of the Habitats Directive, viz. There must be a) no alternative solution available, b) imperative reasons of overriding public interest for the project to proceed; and c) Adequate compensatory measures in place.

This project is wrong on so many levels when you read the County Development plan. It seems that the Applicant once gain just put their head in the sand instead of dealing with the actual issues raised throughout by the Council.

The applicant was hoping to get the last of the low hanging fruit wind projects and I am just delighted and proud of the fact that the council had the wisdom to see the issues in relation to developments in this area. Waterford Council has spent a lot of money promoting the natural beauty of the area with the help of Failte Ireland, it would be a shame to see this all undone by a lack of foresight and a knee jerk reaction to Climate Change.

3. Location details

Upland: Coumnagcappul
Location of planned burn: see map below
Purpose of prescribed burn: The prescribed burn is to control overgrown heather.
The total area of burn: 0.5 ha x 4



Map 12.1. The location of the planned burn sites

It is hard to believe that the gentleman responsible for this is the same one that the EIP project was working with to help improve and greater understand the rich natural heritage, beauty and biodiversity of the area. Prescribed burning of itself is not wrong but taking advantage of it for ones own benefit is.

County Development plan

Regardless of my opinion on the suitability of the project for the area, it is very clear that the area has been accessed by Waterford County Council as a
"No Go" area for turbines in their most recent 2022 to 2028 Development plan.
I met some of the councillors involved in drafting this plan and they are shocked that this project is still being proposed. What is the point of all their work and plans if it can be just ignored for the benefit of a few?
The development plan could not be any clearer on the issue. I know that when the project was first proposed this area was classed as "Open for Consideration" the fact that it is now a "No Go Area" shows the concern the council has for the loss of habitat and the need to preserve our diminishing biodiversity in the area.

Coumnagappul was included in this area, where the project took place as outlined in the image taken from the report above.
This was an award winning European Innovation Project, which was celebrating the unique character, heritage and biodiversity of the region, which included Coumnagappul.
I have included the report for your inspection.
I welcome this type of project and know a lot of the landowners involved and some of the organisers. It is great to see the area so well appreciated and to highlight and spread the importance of our natural heritage to a wider audience.
It is hard to understand how a European funded project bringing upland communities together, focusing on appreciation, understanding the surrounding habitats and means to care for them, could be in the same area as the Applicants project and yet have so differing views of the exact same habitat and environs.
One of the main land owners involved in this proposed Turbine development, Tom Power was also the treasurer of this EIP project. Tom power was featured on many of the press releases and was waxing lyrical about the biodiverse rich area of his lands in Coumnagappul and of the measures he was taking to preserve and restore the habitats.
All of this talk, while at the same time no mention of the very real and present danger which he was planning on, by bringing these monster 185m Turbines and associated works to the very valley he so values.
Not only did this show a lack of morals and honesty to the general public, but I would also argue that it bordered on deceitful and fraudulent behaviour, as he was aware at the time of the planned Turbine project, which was well under way. Therefore, he should have excused himself from this EIP as there was obviously a conflict of interest.
I imagine looking back he wishes he did, as the optics of it now unfortunately tarnish the complete project. Or maybe he is unfazed by his actions and is banking on a big pay day with this project, so he need not worry ever again about the protection of Coumnagappul and its surroundings.
I would also venture that he took advantage of a prescribed burning measure to coincide with the half hearted efforts of the ornithology and habitat studies.
The organisers and environmentalists were not made aware of his plan to put turbines on or in close proximity to these burn areas and so would not have realised his ulterior motive for such actions. This once again shows a cynical and planned effort to minimise the ecological findings in the area as is expressed in the reports.
I have included the map from the Coumnagappul Report from the Comeragh uplands community project.
If you compare it you will see the burning areas coincide nicely with Turbines 2 ,6 and 7 along with a large area of road infrastructure. This is important as these burn areas do not remain as small as shown on the map, that is just indicative of where it is started. The burn area itself is much larger and the damage done is significant as reported and photographed in the Applicants own submissions.

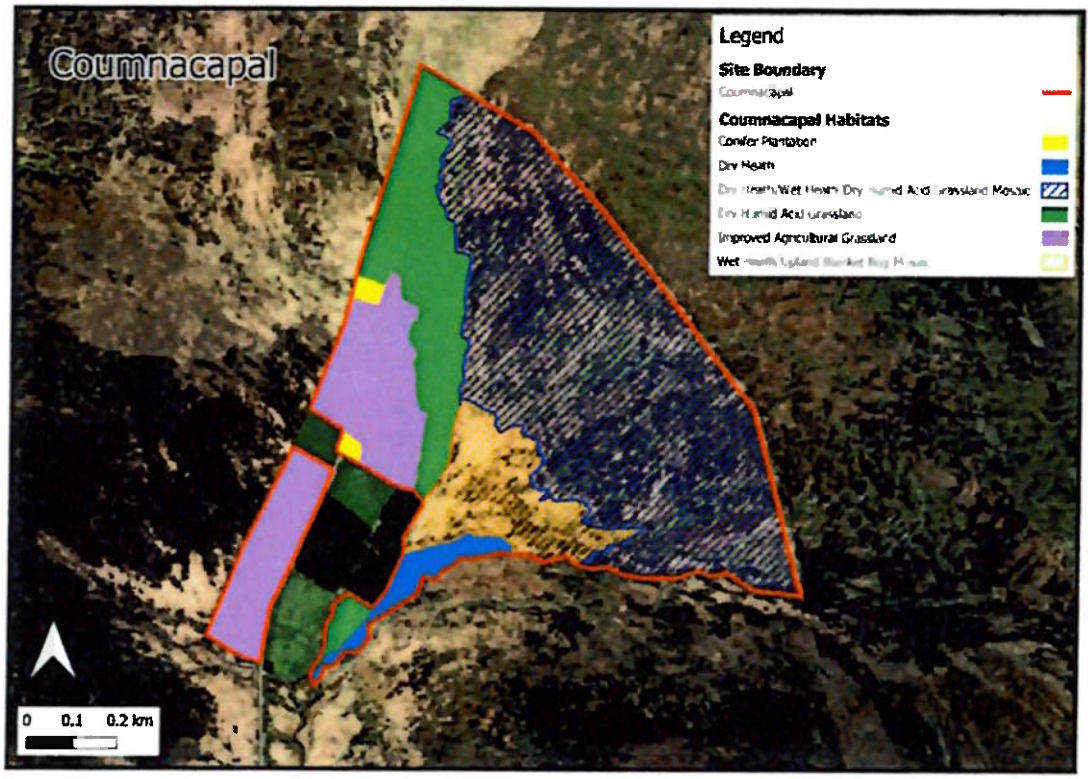
Purpose of prescribed burn:
The total area of burn:
The prescribed burn is to control overgrown heather.
0.5 ha x 4
Coumnagappul
Map 12.1. The location of the planned burn sites

10. Habitats Survey Results and Potential Actions

A field survey of the upland was undertaken in September 2021. An overall description of each habitat was recorded, including common botanical species and other habitat characteristics, *e.g., shrub height, grazing signs, signs of burning etc.*

The Comeragh Mountains SAC is approximately 650 m east of the Coumnagcappul mountain (Map 1.2).

The habitat types recorded across the mountain and their location are shown in Map 10.1. The percentage of each habitat within the upland is outlined in Table 10.1.



Map 10.1. The locations of the habitat types recorded across the Coumnagcappul upland.

Habitat	Area (ha)	Area (%)
Dry Heath/Wet Heath/Dry Humid Acid Grassland mosaic	44.67	55.8
Improved Agricultural Grassland	12.32	15.4
Dry Humid Acid Grassland	11.84	14.8
Wet Heath/Upland Blanket Bog mosaic	8.38	10.5
Dry Heath	2.35	2.9
Conifer plantation	0.53	0.6
Total	80.09	100%

ACRES is Ireland's new agri-environment climate scheme under Ireland's CAP Strategic Plan. This new €1.5 billion flagship agri-environment scheme is a farmer-friendly scheme to help address biodiversity decline while delivering an income support for up to 50,000 farm families in Ireland.

What is the ACRES Co-operation Project?

The ACRES Co-operation Project (ACRES CP) uses a qualitative approach whereby all forage land included in the scheme will be assessed using results-based score cards with incentives in place to increase scores and improve the landscape being farmed.

Results-based payments will be available on forage land that is located within the CP Zone and on commonage land. All forage land within the predefined CP Zone will be identified according to three main habitat types: Grassland, Peatland and Woodland/ Scrubland. Each habitat type has a corresponding score card which can be used to assess the ecological integrity of the habitat. CP Teams may also design additional bespoke score cards or have variations to existing score cards for certain land types/ conservation targets within their respective CP Zone.

All of my land are included in this CP zone and so are all the lands included in this project. I am receiving payments for actions and behaviour that will help to hopefully improve the lands quality and biodiversity with an awareness of the environmental impact some of my actions can have. My fields are scored and the idea is by being paid, I will improve my field scores and improve the habitat. The farmers who own the land or who are farming the commonage are in this scheme as well so it seems very odd to me that on the one side they get paid to protect habitat and on the other they will get paid to destroy the habitat.

Once again, I would ask you to consider this closely. All the Government Departments and agencies are pointing out the same fact again and again.

This area needs to be preserved as it is a high value habitat and if we keep going the way we are, there won't be anything much left to save.

There is no point arguing that it is a small area or it will not have an affect of course it will. Just like, I get paid for small actions in relation to this scheme, because it is recognised and this builds up into a bigger picture. There is no way I would be able to do a fraction of the destruction which this development will cause and get away with it, no matter what plan or mitigation measure I proposed.

Either we are protecting the area or not, and if you give this project permission it is a waste of time for any of us other landowners involved in this ACRES scheme to take it seriously.

Please consider carefully before you give them the right to destroy what we are being paid to protect.

Nowhere in the risk assessment or screening is anything like this ever mentioned or considered. I know that ABP can only go on the application submitted but surely when an Applicant has plans well underway with contracts signed and nature study in progress it should make ABP aware of this intention.
The mind boggles at such an attempt to game the system, EMPower is well aware that the cumulative affect of all these projects is impossible to even begin to mitigate for and that there would be no way to get ant Environmental scientist or expert to go along with it. But if you split it up into nice sections and apply individually for them and ignore the presence of them then anything goes.
Such is the scheming that is been done right under our and your noses.
EMPower has never denied their intention to expand this project immediately and they also expressed their wish to me for including a solar element into the area. They mentioned the Renadaunpaun area and I also think that EMPower are thinking of putting some in the Kilkeany townsland, owned by Sheehans as well.
Again, this has not been clarified, as I am sure they will wait and see how this application goes, and then add it as they intend to do with the rest of the project splitting that they are doing.
What I do know is, land included in this present application continues from Kilkeany Mountain down toward Kilkeany townsland, where part of it is used for the Biodiversity enhancement project. The rest of the land has nothing on it and no mention of use for turbine project.
I had maybe thought that Sheehans signed over the complete Folio number to EMPower when signing the contract. I looked it up and some of that land has been removed, therefore if they wanted, the rest of their land that was not been used by the turbines and biodiversity project could have been removed, but it wasn't.
This brings me to my next point regarding project splitting, especially in relation to the Solar element of it.
When you look up the coumnagappulwindfarmsid.ie website on the front page welcoming you at the very top of it was a banner announcing"Harmony Solar".
For some reason this was only on the portable devices website version, such as smartphone and tablet, compared when you look it up on a PC then it didn't show any mention of "Harmony Solar".
Why is that and which website version is the correct one? Why are "Harmony Solar" involved anyway, as it was never mentioned in regards to this wind turbine project?
Now, I had never heard any mention by the applicant officially that they were putting Solar in conjunction with this project nor is it in their application to ABP so why is it mentioned on their website? Yet, here it was announced as if it was a coming attraction.

Access Route

Another major issue I would have with this project is the proposed access road to the actual turbine locations, as it comes off the road, veers north and goes along the side of Knockavannia mountain, up to the summit nearly and then around into the valley and towards Coumnagappul.
They could have went straight through towards Turbine 4 and the substation as they came in off the road but instead this 3 km detour.
Now they say they were protecting the habitat at the ridge area, which is scree and suddenly seems important for them to protect but in other places it is ignored. I would wager it is because they want the road infrastructure on that side of the mountain as it will be used for the Extension project. There was originally in the first Turbine layout plan, a turbine along this route, number 9, but it was cancelled for various reasons never clearly

explained. This runs along the side of the mountain and will dissect the hill in half and will be extremely damaging visually and environmentally. But the road plan still exists as Coilte and Sheehans are still on board with EMPower for the extension plan and as stated they are doing ornithology studies at present up there.
Therefore the road is actually part of another project and they are destroying acres of land just so they can easily connect the future project.
The question arrises just how many projects are they hoping for out of this so called one project?
Who are "Harmony Solar"? Why are they not mentioned in the application as having a part to play in this proposed project? Why is it vital to avoid habitat in one place and then completely ignored in others?

Something is not right and I would appreciate if you could clarify with the Applicant who is exactly involved.
Please don't let them pull the wool over your eyes, it is clear what they are up to so stop it before they make fools of us all.

Vesta Model 162

I would like some clarity on the turbine that is proposed for this project. The Applicant says it is using the above model and mentions a hub height of 105 m. When I looked on the the Vesta company website there is no such hub height for this model or variation of it.
This may be down to customisation or some other reason but surely the EMPower needs to give full and true information on the application in relation to the turbines they plan to use.
They say in their application, as follows:

"The final choice of turbine model is anticipated to be a Vestas V162 model wind turbine. This turbine model has been included for the purposes of EIAR and planning approval."

This creates a certain amount of ambiguity about which turbine they plan to use. All of the studies use the specifics of the above turbine and yet they have plans to use an altered version of the above or something completely different.
After over 4 years of planning and various changes in numbers, positions and routes for turbines, it turns out that the simplest element of this task hasn't been decided yet. What turbine are they planning to use and will it have the same specifics as the one mentioned or are we just to accept what ever they decide thereafter, to put up. There has been trouble before in this county in relation to Turbines not been of the height mentioned in planning and I'm sure it has happened in other places too.
There should be no room for error in this regard and if it is a different turbines used the studies done, which used these specifics should be discounted as they were done using false data.
This may sound like a small issue but I would contend that it is a prime example of the sort of unprofessionalism and lack of detail that riddles this application.

Local Concerns:

Springs and gravity flow supply

The applicant has not bothered to investigate the fact that some of the houses and farm land in the area of the project are serviced by gravity flow water from Knockavania and surrounding hills.
I have land nearby the project which receives its water from Knockavania springs for my livestock.
This feed also supplies a dwelling on my property.
My two neighbours houses are also gravity fed by springs which rise from Knockavania.
There was no mention of this in their assessment of impact on surrounding dwellings or farmland.
It is well understood that changes in groundwater and springs can be caused by the smallest of disturbances, the project proposed by the applicant is on a scale that will most definitely have an affect on this. They cannot in any way guarantee that there will be no loss of quality or quantity in my drinking water or the water supplying my livestock.
This is a serious oversight by the EMPower and causes me great concern, which they have done nothing to ease.

Traffic

There will be an increase of over 2400% in traffic on the road beside me. In what world is this an acceptable increase, especially when the roads are barely capable of coping with the existing traffic.
The applicant mitigates this number by insisting that although this is a large percentage increase, the roads are very quiet and therefore this percentage increase is exaggerated and the reality is the traffic numbers are not concerning.
Here are the numbers from the Screening report, as follows:

The construction phase for the entire project will lead to 42,742 additional HGV trips (two-way) over the durationof the construction works.

Average daily increase of 92 HGV trips per day over a construction period of 24 months. This increases to anaverage of 195 HGV trips per day during the peak month which occurs in month 6 of the programme for HGVtraffic.

An average workforce of 30 persons is anticipated, increasing to 40 persons during peak periods. This is estimatedto give rise to an increase of LGV traffic of 44 trips per day on average rising to 56 trips during peak construction periods which occur for LGV traffic during months 6 and 7.

The combined HGV and LGV average daily increase is 161 trips per day throughout the construction programme

This is not a small traffic number, especially on such small rural roads surrounding this area. This is the main road to Dungarvan for me and to the local co-op in Ballinamult. I also head this direction to some land I have adjoining Knockavania.

The Garda have also expressed their concern about the volume of traffic on these small rural roads as to have Transport Infrastructure Ireland (TII).

The idea that this will not have a serious impact on travel speed of these roads is delusional and worrying.

According to the guidelines used by the Applicant for their screening report UK DMRB Guidance(uk highway agencies 2007):

Under this guidance various changes in traffic caused by a project are described as qualifying criteria for a significant air quality impact and requiring an assessment.

Looking at the criteria it seems to me the Applicant has made an error or has ignored this.

There is no doubt that the daily average speed will drop by 10km/h and the Peak speed will drop by 20 km/h.

Traffic will come to a crawl if the amount of traffic projected is left to travel these roads. Anyone with any knowledge of small rural roads knows that even during harvest and silage season the roads are dangerous and traffic moves frustratingly slow. This is only a fraction of the proposed traffic that would come with this project and it causes a serious delay every year, for a short period.

Now imagine 161 HGV trips per day for an extended period and see what would happen with your average speed and possible accidents and fatalities.

I do not understand how the EMPower has come to its conclusion on the road speed, nor have I seen any proof of this. I would be interested in some clarification, as I am sure I will be travelling a lot slower as I wish to stay alive on our roads.

Turbary Rights

My mother is a Mulcahy from Kilkeany.
The Mulcahys have been from this area for many generations, part of that history was turf cutting on the bog. I am sure my family have Turbary rights on Knockavania on the mountain area, which are included in this project. Two of the dwellings which would of been associated with those rights are in my possession still, so the rights would still lie with me.
This has never been addressed in any manner and I would have concern about this fact.

Unscrupulous dealings and false promises

As mentioned earlier I lost faith in the people running the project and their agents. This was further galvanised by my later conversations with Brian O'Shea who was the person who EMPower engaged to work out land deals with people.
This gentleman was well used to this game and seemed to view it as such, a game, where all that mattered was him getting his signatures.
He discussed the Coumnagappul Extension Plan as he called it, and mentioned landowners who had signed up or were about to. He also offered me a slice of the action, promising a turbine of my own on a small field I own at the top of my farm not far from the proposed project.
I was sceptical as this is a roadside field and in my opinion far too near to the road. But no, he was insistent I would be able to get a turbine on it. I again, tried to clarify and asked did he not mean maybe auxiliary works, access, cabling or the likes, but no, again he insisted a turbine was possible.

I felt like he was just trying to get me to sign, so I would not be able to object to the project. He was aware of my concerns and eventually stopped. I asked him to come back sometime to discuss in full but he never did. Later, I confronted him at one of the information nights and asked why he never came back with a proper offer or discussion and he told me it was up to me to contact him. This was something I was never told and has not been my experience when talking to other landowners.
After that I found out he had also promised a turbine or part of one, to my neighbour Catherine Mulcahy who has land across the road from mine. Her area is smaller that mine and also in no way would be suitable for a turbine.
Luckily she turned them down, but only after realising from talking to others that what was been promised was not a reality. The contract always stipulates subject to planning and suitability, which in both these cases it would have failed on.
Brian O'Shea was fully aware of this when making these offers, but was hoping to blind people from the reality with the promise of riches, and by doing so, stop them from putting in any objection to the project as that would be part of the contractual agreement.
There was a complete lack of integrity and honesty in his dealings with people.
I have heard from other people about how he conducted himself in his quest for landowners signatures.
On another occasion after realising land was not in the name of the person he was dealing with he tried to bypass them and go straight to the source. This involved staying for a period of time parked outside an elderly woman's house who was afraid to come out and eventually called her son to come and clear him away.
There was also the usual arriving at unscheduled times and putting pressure on landowners to sign, as not to lose out or also not to be an obstruction to others.
Some of the landowners were quite elderly and this man was unscrupulous in his determination to get a result.
Another encounter with Mr. O'Shea was at the last information day held by EMPower in Ballymacarbry on the 26th April 2023.
At this event I raised the question of why only now had they a meeting here in Ballymacarbry after years of requests from me and others, and as I did so Brian O'Shea claimed that many people had requested him to have the meetings in Touraneena where they had them previously.
I found this comment strange and unbelievable and immediately asked him to provide me with even one such request made by anyone? One name?
There was silence. Marc McLoughlin, Chief Operations Officer was beside Brian O'Shea at this time and was part of this conversation. My neighbours also witnessed this exchange and were also awaiting a response.
Nothing. I asked again and after a further silence made the assumption and statement to Marc McLoughlin that the man working for him was been untruthful to us all and that this was not his first time in doing so.
Unfortunately I was correct and Marc McLoughlin nor any of his other colleagues were able to backup Mr O'Shea's false claims then or since.
This is the type of unscrupulous behaviour we were up against the whole time for the last 4 years, where questions were given answers that suited.
This type of behaviour should have consequences and the only way to make sure this type of thing doesn't happen anymore is to not reward it by giving them the much sought after permission to build on our mountains.
Perhaps EMPower are aware of this, as I notice in their application there is no mention of Brian O'Shea on the C.V. page or anywhere else. Strange as for a lot of people around here he was the face and voice of EMPower, the person that most people would have seen and met around the area, and also at the information evenings.

Public Consultation

Public consultation was a disaster.
They kept the original public meeting in Dungarvan low profile, miles away from the concerned locals. According to their own application describing the site position, as follows:

2.1.1 The Site

The Site is wholly located in the jurisdiction of Waterford City and County Council, with the turbine array located 15.8 km north of Dungarvan town centre and 14.5 km south east of Clonmel town centre. The nearest settlement is Ballymacarbry, located 5.5 km to the north west of the Site.

Why would you possibly have a community consultation almost 16km away from the project and most local residents, 24 km in my case.
They knew the nearest settlement as they call it is Ballymacarbry, so why did they ignore it for years?
I missed the first meeting, as I was completely unaware of it and got no notice or leaflet of any kind. Nor did any of my immediate neighbours.
When I did finally find out about the project it was from a landowner who is involved in the project who discussed it with me and not from EMPower.
I live within the 2 km zone of the turbines and this was their attempt of informing me of the project, 24 kms away with no notice!
The man who is meant to be in charge of community consultation is Michael O'Connor, who is the appointed Community Liaison Officer for the proposed Coumnagappul Wind Farm project. The strange thing is the only time we met Michael was at the information events. As mentioned earlier the man we mostly met around here was Brian O'Shea, who was doing the land deals where ever he could. What I was wondering was how is it possible for Brian O'Shea to visit every landowner in the area and some other people as well on multiple occasions and yet the man in charge of Community Liaison was not able to get out once to inform even the original 2 km zone eircodes of only 44 households? 44 households and even at that we didn't even get an original notice of the first meeting in Dungarvan.
Michael was quite happy to answer questions by email, but as far as spreading the word to people that was left to the locals to do. This is not acceptable and it gives you an idea of what was most important, landowner signature or peoples awareness.

The following information events were held in Touraneena, while this was better it was still not really in the area for the greater population that would be affected by the project. The obvious place was Ballymacarbry, which is the largest village in the area and has a large community centre available for such events.
Despite many calls to have the event there, EMPower refused the requests, until eventually they held the last event there. I imagine this was just a box ticking exercise so they could say they listened to concerned residents! If they truly cared what concerned residents thought they would have had the events here from the beginning.

The delivery of the brochures and notification of the information events was an absolute disgrace. Again this was highlighted to EMPower on many an occasions, online and in person.
They did apologise for the poor service but unfortunately that is all they did as the service remained completely inadequate.
We did not receive notice or the brochure on three occasions or more, on two other occasions we received the brochure on the day of the meeting or the day before.
Once again my neighbours were also the same, some received one others didn't, there was no continuity to it or understanding.
The people involved in distributing the literature did the company no favours in the manner of their delivery, it was like a hit and run, no discussion, no explanation, dropped it where ever they could and drove away as quick as possible. This caused quite a concern with some residents and ended up in a matter having to be resolved with the Garda.
This is not how one spreads the word to a community. For the number of residents involved, as EMPower loves to say we are a low density residents area, they could have spent a few days delivering the brochures and be ready to try and help people understand the coming proposed project, this was not to be. Instead they paid someone and they did not seem to care about the results. This is worrying as all the talk means nothing if the actions are not followed through.

In relation to the actual consultation meetings I would have a few issues with them. The displays were very poor and unclear, after many requests for clarity they still didn't change. The maps were super saturated to an extent that the underlying map places and roads were hard to make out. As locals, we were hard pressed to find our own houses. For others it was a waste of time trying to make it out. We asked them to clarify and change it so we could make it out easier, but nothing was done about it.
The WLR fm reporter was present at the last event held in Ballymacarbry and he also mentioned the poor quality of the presentation maps and projector display on the day to me, and included this in his report of the event on the radio later.
We did not ask for the radio station to cover this event that was their own choice and we were happy to comment to them. Unlike EMPower, who refused to give a statement and would only give an interview two days later to WLR fm, in which their spokesperson accused WLR fm of being biased with an agenda, and they portrayed the people who were raising concerns as a fringe one or two people who always attended the meetings and caused trouble, as they were against the project. They were of course referring to me and some of my neighbours and friends who have had concerns since the start, and rightfully attended as many of the meetings as we could, to get informed. This attempt to make us out like a fringe minority was ridiculous as the only people I know in the area, affected by this proposed project who are for it are the ones receiving large monetary compensation for their lands. There was no mention of Waterford County Council Development Plan, which is also also against it. This would make us the majority then and not the minority. This was conveniently ignored by the spokesperson.
The fact that EMPower tried to put the application in to coincide with the Christmas season, when they know it is hard for anyone who wishes to make an Observation to reach anyone who maybe able to help, shows once again the lack of consideration afforded to the public.
Fortunately, due to the applicants own ineptitude and incomplete application we were lucky to get an extended date from the 8. January to the 29. January 2024.
It is hard enough to try and gather information and help in this time frame without the applicant trying to use the Holidays as a buffer zone.

All in all, I think you will agree the above actions hardly speak of a concerned developer wishing to have meaningful discussions with the residents, in contrast it was just the usual fulfilling of the requirements and move on quickly to next issue.

I had my own unsatisfactory dealings with the Applicant as well One specifically comes to mind where Marc McLoughlin COO and Brian O'Shea (title unknown)
Had arranged to meet me at my house. The time of the appointment came and went, I wondered were they lost, but remembered Brian O'Shea knew where I lived and also they had all of the local residents Eircodes.
After an hour, I decided to drive up the road towards the mountains and development area.
Who should I see parked in a lay by studying maps and looking across at the distant hills only the two lads. Here they were less than 5 minutes from my house and they didn't have the decency to come down to me or explain their tardiness. They didn't even try and phone, although reception may be poor so really a short drive was required, but nothing. They made an apology but there was no excuse forthcoming, as there was none, they just didn't bother coming to the appointment so I assume they didn't feel it was worth their while. This sort of behaviour is unacceptable and it reflects on the general attitude of the people involved in the project to the local community.
I expressed my dissatisfaction with their behaviour and also that I had lost all faith in them. I had been given a lot of misinformation, half truths and found that I was just being misled.

Poor quality material

I cannot understand how a project of such cost and so called experts are unable to provide quality material in both the physical form, such as explained above and also online.
I have a large screen and a high quality computer and yet despite my best attempts I am unable to read some of the material, maps and brochures provided online.
This information is meant to be available for us to readily digest in an easy format to help with our understanding of the findings and explanation of results. I find it hard to do this, when the information been provided is unreadable.
For example please look at Appendix-5.2-Coumnagappul-Community-Consultation-Report- in the section relating to answered question at Q&A session.
Appendix 4f – 05/10/2022 Online Design Webinar Questions Answered.
It is impossible to make out anything written on it. This is one of the most relevant sections for a local resident to find out what exactly is going on, as there were questions from people who live in the area and the answers will give them a sense of the project. Instead they will need to contact EMPower directly maybe or else forget about it.

The same applies for copies of the newsletter such as the following:
Appendix 3a – 21/05/2021 Project Information Newsletter found in the same report.

As mentioned earlier for a lot of us living around here, this may be the only time you get to see these newsletters as they were so poorly distributed, and if that is the case well then you are out of luck again, as for the bad quality it is impossible to read these and the maps are even worse.

What could possibly be the reasoning behind this? This is online and the resolution and quality is not a cost issue, which would normally be associated with printed material.

This is just a case of either not wanting people to be able to read the material or not caring enough to ensure it can be read. It is likely the first, as I have mentioned to you already that on many occasions the issue of quality was raised with the applicant and it was ignored.

I am sure there are many other examples of this poor quality to be found in the application and I feel it is unacceptable for the Applicant to not provide good quality, clear and easy to view information.

I suppose you could say they tried to put the material up no matter how poorly, that is better than their attempt to supply planning drawings.

Incomplete application

I am referring to the fact that on the Applicants' website coumnagappulwindfarmsid.ie in the Planning Documents section under Planning Drawings, there is supposedly 12 pages of drawings, a total of 114.

In fact there is only one page repeated showing the same 10 drawings on page one again and again. I made a video of this as proof and as of writing this on the 16. January 2024 it is still the same. I imagine it will stay the same.

This is quite a serious issue as the Applicant is required to make all the application available to the public on their website as part of the submission to An Bord Pleanala.

The Applicant has prior form in this regard, as their original application was also deemed to be incomplete due to missing Planning Notices, which were added later in an Addendum, and so the deadline for Observations was extended.

I wonder how much more of the application is incomplete and was possibly unnoticed by one and all?

Please consider the option of dismissing this Application as it remains incomplete.

Letters of Consent and Ownership

In the Addendum C, Letters of consent, Schedule 5, the signature of Paddy Coffey is missing. It is not included on the follow up page either.
His name is included as one of the parties agreeing to this consent but that is all that is there, no signature?
I am interested to know if this is a valid letter of consent despite the fact it is missing a signature. What are the parties agreeing to?What land is involved, if it is land as nothing about property or land is mentioned in the letter?
What area, where is it and are all the parties included?
If this is a commonage, then all Shareholders need to agree and as stated above it seems Paddy Coffey has not signed this letter.
How do we know it is commonage, there is no mention of all the share holders involved, inactive, active or Dormant Shareholders. There is not a commonage plan or map asserting the rights of commonage.
This all seems very vague and I would question the validity of the document in giving entitlement to the Applicant to carry on its project on the lands involved, that is if they are

pertaining to Knockavannia, but how do we know as it is not stated anywhere what land is involved.
Another issue I would have is that even if in some bizarre way the consent letter is valid, the consent to use this land for development is not able to be given by the signees.
If in fact they are Shareholders in Commonage, which has not been proven, but if they are, the rights of commonage are very simple and straightforward.
They pertain to the right to graze the land and act as custodian of it.
Nowhere is it mentioned that Commonage includes the right to develop or destroy the land and habitat. This goes against everything that Commonage is about. You cannot buy or sell commonage as it belongs to the state.
Each commonage parcel is meant to be maintained in good Agricultural and environmental condition.

EU and national environment policy makers are coming to realise the importance of Commonages as a valuable cultural, ecological landscape type in themselves. Ireland's Rural Development Plan clearly states that appropriate management of these areas will contribute to meeting priority 4A. This priority involves '*restoring, preserving and enhancing biodiversity including in NATURA 2000 areas and in the areas facing natural or other specific constraints and high nature value farming as well as the state of European regulations.*'

As if this all wasn't confusing enough for me, you then have another issue of ownership pertaining to the land registry Folio Number WD5902.

This is in the letter of consent from Brendan Tobin in which he states he is the owner of the above Folio number and has given consent to its use in the proposed project.

The problem is when I looked up the land registry and bought the folio to confirm ownership, I found that Brendan Tobin is not on the folio as the owner. Instead it is a Thomas Coffey as shown below on the Folio document.

County Waterford

Folio 5902

Land Registry

Part 2 - Ownership

Title POSSESSORY VO 16-JUL-1937

No . The devolution of the property is subject to the provisions of Part IV of the Registration of Title

16-JUL-1937 THOMAS COFFEY of BALLYMACARBERY, CLONMEL,
1 COUNTY WATERFORD is

L.R.104/35845

I find it hard to believe that the Applicant did not confirm ownership details and if they did what is going on in relation to the Land Registry details? I was going to add that they had plenty of time to do so, which is true but, unfortunately we don't know when this letter was signed as it is not dated.

Nor is this the only letter that is not dated, there is no date on Edmund Sheehans or John Hannigan letters of consent either.

If the Applicant does not have letters of consent or proof of ownership by the parties involved then the project is going no where and the application should be deemed Incomplete.

Curriculum Vitae Issues

As mentioned earlier the absence of Mr. Brian O'Shea from this Appendix 1.2 was surprising as he was the mouthpiece and master of this project on the ground, and had more dealings directly with people than almost anyone else.

Perhaps the Community consultation was such a disaster and his input so unsatisfactory that they decided to erase his participation in the project, they may try to do so but it would take a lot more than that for me to be able to erase the unfortunate experience.

Aside from the above omission which I can understand, I have some questions in relation to the details of some others on the list.

In particular, Ashling Fenton and Fiona McKenna, who both work for MWP, have included the Coumnagappul Project in their Relevant Experience as you would expect, but surprisingly they state that the ornithology surveys are still ongoing, not mapping or other works, but Surveys.

Ashling Fenton:

Relevant Experience Project Coumnagappul Wind Farm, Co. Waterford 2022- present
Description
A proposed development of a 10 No. turbine wind farm associated infrastructure in Co. Waterford. MWP are conducting ornithology surveys since summer 2019 (which are still ongoing) and report writing /mapping to present results of these surveys.
Role Ashling was involved with mapping which included several seasons of bird survey data, and the relevant maps to accompany the Environmental Impact Assessment.

Here is the relevant section relating to Fiona McKenna

Project Description Coumnagppul Wind Farm, Co. Waterford 2021- present
A proposed development of a 10 No. turbine wind farm associated infrastructure in Co. Waterford. MWP are conducting ornithology surveys since summer 2019 (which are still ongoing) and report writing /mapping to present results of these surveys.
Role Report writing for all surveyed seasons to date.

Once again it states the Survey work is ongoing.

Why would the survey work be ongoing, if they were completed and presented in this application to An Bord Pleanala as finished?

Were they not completed correctly or on time? Is there more information that the Applicant wants to share with us or is there another reason for this ongoing status?

I would suggest that this may be due to the fact that there are ongoing studies by the Applicant in relation to the planned Coumnagappul Extension project which was discussed by the Applicant and they reassured people it would be a separate Planning application. This is true of course, but it seems that even their own people see it as a continuation of the same project and that is why the Survey is still on going, as the same areas are involved and then it spreads further.

In all of their Mitigation works and talk of Cumulative affects, never is it mentioned that the plan is to double the size of the project very shortly if possible.

I know that An Bord Pleanala can only rule on what is in front of it and not on speculation of future projects, but if this project gets the green light then you will be receiving another application for an extension in the near future, as it is currently being worked on.

Another issue is the fact that some of the people involved in carrying out the surveys and work don't seem to be aware of the area where they are working.

In this instance it is Aidan Duggan who was involved in Field Work Projects for the Applicant and who has twice included the wrong townsland in his description of work on Coumnagappul wind farm.

Aidan Duggan

The Farmhouse, Dooniskey, Lissarda, Co Cork. P14Y221 Email: aduggan272@gmail.com Mobile: 087 2351240 D.O.B. 29/12/1968
Field Work Projects from 2006 to present. -
Clients: Malachy Walsh & Partners, Reen Point, Blennerville, Tralee, Co. Kerry. Sites – Knocknanask, Broe Mountain, Coumnagappul Wind Farms.

Knocknamask and Broe mountain are both located in the Dyrick wind farm which is also a planning submission to An Bord Pleanala by EMPower in the vicinity of this project and it seems their survey people seem to think they are one and the same, an understandable mistake considering there close proximity.

Incorrect charts

Table 18-1 Matrix of Interaction Between key Environmental Aspects

	Air Quality &Climate	Noise & Vibration	Biodiversity	Ornitology	Soils, Geology and Hydrogeology	Hydrology and Water Quality& FRA	Population and Human Health	Shadow Flicker	Traffic & Transportation	Archaeological, Architectural & Cultural	Landscape & Visual Impact	Material Assets, Telecommunications and viation
Air Quality & Climate		■	■	■	■	□	■	□	■	□	□	□
Noise & Vibration	■		■	■	■	□	■	■	■	□	■	■
Biodiversity	■	■		■	■	■	■	□	■	□	□	□
Ornithology	■	■	■		■	■	■	□	■	□	□	□
Soils, Geology and Hydrogeology	■	■	■	■		■	■	□	■	■	□	□
Hydrology and Water Quality & FRA	□	□	■	■	■		■	□	■	■	□	□
Population and Human Health	■	■	■	■	■	■		■	■	■	■	■
Shadow Flicker	□	■	□	□	□	□	■		□	□	■	■
Traffic & Transportation	■	■	■	■	■	■	■	□		□	□	□
Archaeological, Architectural &	□	□	□	■	■	■	■	□	□		■	■

	Air Quality &Climate	Noise & Vibration	Biodiversity	Ornitology	Soils, Geology and Hydrogeology	Hydrology and Water Quality& FRA	Population and Human Health	Shadow Flicker	Traffic & Transportation	Archaeological, Architectural & Cultural	Landscape & Visual Impact	Material Assets, Telecommunications and viation
Cultural Heritage	□	□	□	■	■	■	■	□	□	■	■	■
Landscape & Visual Impact	□	■	□	□	□	□	■	■	□	■	■	□
Material Assets, Telecommunications and Aviation	□	□	□	□	□	□	■	□	□	■	■	■

■ = interaction or inter-relationship ■ = no interaction or inter-relationship □

While reading the application and trying to decipher some of the confusing material I was befuddled by the chart shown above, which is from Chapter 1, Non Technical Summary.

Now I don't know what they are doing here, it seems to imply that there will be no interaction between Traffic and Transport and the change in Noise and Vibration, Biodiversity, Ornithology, Air Quality and Climate, Soils, Geology, Hydrology and water quality and FRA.
This seems incorrect and the same applies to the rest of the chart showing the interactions between key environmental aspects.
It would appear that there has not been a great level of detail and inspection put into this application, as this and the other discrepancies mentioned earlier show.
This would lead one to question the competency and quality of the complete application and the surveys included.
Considering the time allocated to this and the money which was mentioned available to spend on the project how is it that someone like me can find so many errors and I am sure there are many more awaiting your discovery.
Best of luck with it!

I know there are many more reasons why this project should not receive consent, above are just a few which I am aware of and hopefully you will understand the concerns expressed. During my time reading the submission and discussing it with people, I was aware that everyone has issues about the project that they regard as important.
As I write these final words I have just seen that the 4th National Biodiversity action Plan has just been launched, this will be the first which will be backed by legislation, withe legal requirements for public bodies.
The timing of this should not be lost on us. Our habitats are crying out for help, this is from that report.

Scientific studies have shown that
85% of our most
precious EU-protected habitats are in unfavourable
status. Almost half (46%) are demonstrating ongoing
declines, particularly notable in marine, peatland,
grassland and woodland habitats, with only 2% improving
over a 12 year period (NPWS, 2019). Almost a third of our
semi-natural grasslands have been lost in the last decade,
while half of our rivers and two thirds of our estuaries are
not in good ecological health (Martin
et al., 2018; EPA, 2021)

I am sure I could point out plenty relevant information in this report which would strengthen my case but instead I will just include it for you convenience.
We need to help nature not stand in the way of recovery. I just checked and the limit is 30mb for uploading to your site, I may not be able to include the Coumnagappul Upland report or the new biodiversity action plan. It seems strange that there is such a low

document size allows , especially compared to what the Applicant was allowed to include. By the way as of sending this the Applicants website coumnagappulwindfarmsid.ie was down for almost a day. I was waiting to see if they rectified the missing drawing plans but they have not. Harmony Solar are also still on it. Here is the cover, the full document is available from the Author and the Department of Agriculture, food and Marine.

Tom Power is the largest landowner involved in the Turbine project and his statement on the cover of this is quite astonishing. At the time of compiling this report the Turbine project was busy surveying the area.

I do know that there will be a lot more qualified people than me making Observations and I would hope they will help in giving a bit more detail to some of the issues raised by me. Thank you for your patience and please, help me to help our mountains and say NO.

Sincerely,

Brian Walsh

Comeragh Upland Communities EIP Project

COUMNAGCAPPUL UPLAND REPORT

My vision for the Coumnagappul Upland is to improve and maintain the quality of the habitat using my new knowledge and prescribed burning management so that it provides a sustainable income.

Tom Power
July 2022

Editors: Owen Carton, Michael O'Donoghue, Catriona Foley & Catherine Keena

The Comeragh Upland Communities is a European Innovation Partnership project being administered by DAFM. The Project is funded by the EU Recovery Instrument Funding under the Rural Development Programme 2014-2022"

Dedication

1967 - 2022

The Waterford Hill Sheep Discussion Group members dedicate the EIP project's work and output to the memory of Willie Fraher, their friend, neighbour, founding member and former Chairman of the Discussion Group.

Ar dheist Dé go raibh a anam

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine

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

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Acknowledgements

Tom Power of the Coumnagcappul upland participated in the Comeragh Uplands Communities European Innovation Partnership Project between July 1, 2021, and July 31, 2022.

He wishes to thank the Department of Agriculture, Food and Marine for the project funding. They acknowledge the support of the Project Team of Owen Carton (Project Manager); Michael O'Donoghue (Geography and place names); Catriona Foley, and Catherine Keena (Teagasc). Hugh Carey, National Monument Service (Monuments); Philip Murphy, LAWPRO and Cathal Somers, ASSAP (Rivers and Streams); Maurice O'Connor, Daelyn Purcell and James Whelan, Oakwin, (Birds & Fauna); Helen Lawless, Mountaineering Ireland (plants and Walking with Wildlife brochure); Enda Mullen, NPWS (Comeragh Mountain Habitats - Introduction); Julie Larkin, Oakwin, (Habitat Survey and Integrated Plan); John Casey, Teagasc & Ciaran Nugent, DAFM (Prescribed Burning); and the other members of Waterford Hill Sheep Farmers Discussion Group for their support throughout the project and their contribution to preparing this report.

The author wants to thank our Tuesday Tea Talk speakers, Brendan Dunford, Michael O'Donoghue, Hugh Carey, Michael Desmond, Sean & Sile Murphy and Fran Igoe, who inspired not only us but the Comeragh rural community with their knowledge and understanding. We acknowledge the support from the Rathgormack and Ballymacarbry Community Centres, who hosted the talks.

Preface

Working on the Comeragh Mountains with the Teagasc Waterford Hill Sheep Discussion Group members and people from the adjacent rural communities on the 13-month European Innovation Programme project "Comeragh Upland Communities" has been a privilege and education for the members of the project team.

The objective of this report, divided into several sections, is to provide supporting reference material based on the field training activities completed. It also will give a project legacy document for the farmer and his family.

This preface to the report aims to provide a context for the project and its activities. It also summarises the project's outcomes, learnings and recommendations for consideration in developing both i) the research, demonstration and knowledge transfer activities required to deliver a range of upland ecosystem services and ii) possible measures for implementing CAP Green Architecture in Ireland.

Farming, particularly hill sheep grazing on the Comeraghs, continues to shape its ecosystem's structure, diversity, and functioning. The Comeragh mountains deliver high-quality lamb output, as evidenced by the successful Comeragh Lamb[1] initiative.

In recent years, farming in these uplands has been locally recognised locally as having the potential to provide public goods or services that build on its natural and cultural heritage. It is evidenced by Waterford City & County Development Plan 2022 - 2028[2]. Among its strategic objectives are

- Integrating climate change and adaptation considerations into land-use policy objectives ...
- Protecting, managing, and enhancing the natural heritage, biodiversity, landscape and environment of Waterford City and County.... providing a unique identity and character for the county and city as a natural resource asset.

Comeragh's ecosystem services and public goods include biodiversity & habitats, the provision of clean water, carbon sequestration, landscape, and public access and health. They offer an opportunity for the necessary increase in farmer incomes from the uplands to ensure their economic, environmental, and social sustainability.

Fig 1. *The mix of goods & services from the uplands includes food production, water supply & flood control, carbon sequestration, habitats, public health and recreation. The relative contribution of each service to the farmer's or shareholder's income will depend on the farmers and the commonage or upland's natural and cultural resources.*

[1] *https://www.comeraghmountainlamb.ie/*

[2] *https://consult.waterfordcouncil.ie/en/consultation/draft-waterford-city-and-county-development-plan-2022-2028*

The potential mix of deliverables and, ultimately, the income from uplands and commonages[4] will vary within and between the Comeragh upland areas, reflecting the objectives and incentives, and the ambitions of those farming the uplands (Figure 2). There is no one size fits all solution.

Fig 2. Water supply & flood control, and biodiversity & habitats are the primary deliverables in A (left), while food production is the primary deliverable in B (right) in both reports.[3]

The 2014 National Survey of the Comeragh Mountains Special Area of Conservation (SAC) report[5] identified the status of the eight mountain (Annex 1) habitats as Unfavourable – Bad. In general, on the 4,500 ha of upland assessed in our project, we found the status of dry heath on the participating uplands, when present, was in reasonable condition.

The national survey found the dry and wet heath areas are reducing, contributing to their unfavourable status. We found the quality of wet heath and blanket bog habitats was generally poor. The pressures we identified in some heath areas included overgrazing, over-burning, bracken, purple moor grass, and scrub infiltration. These were drivers of the shift from dry heath to grassland habitat.

A wide range of agendas and complexities are associated with the natural, cultural and social environment of the Comeragh mountains. These create challenges in developing management solutions to protect and enhance the natural and cultural heritage. However, the mountain's stunning and unique geographic features, its natural beauty, and over 6,000 years of cultural heritage demand that sustainable solutions for the community are found.

The farmers participating in the project have generations of experience with sheep production, and their flock management has responded to the changing economic and policy drivers. For example, wool was the primary output up to the early /late 60s when the demand for wool was high. It has declined to almost nothing today.

Policy changes around that time led to per-head sheep payments. Also, upland farmers began to focus on increasing lamb production to replace the wool income loss due to the market's collapse. The responses were sheep numbers reached almost nine million nationally by the early 90s, which resulted in severe and significant overgrazing on many uplands. In addition, lowland sheep farming practices to maximise lamb production resulted in hill sheep losing their exceptional qualities (for hill land environments) of being hardy, independent and easily kept.

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[3] *Adapted from original figure in Functional land management: A framework for managing soil-based ecosystem services for the sustainable intensification of agriculture Schulte et al (2014) https://www.sciencedirect.com/science/article/pii/S1462901113002104*

[4] *In this report the term "upland" refers to privately owned mountain while commonage refers to mountain areas where two or more farmers or shareholders have grazing rights.*

[5] *https://www.npws.ie/sites/default/files/publications/pdf/SPEU09_Comeragh_Mountains_Report_01b_M.pdf*

Once the ecological damage was recognised, new policies (Commonage Framework Plans) were implemented to address the problems. The latest policy changes reflected in the new ACRES scheme focus on delivering environmental goods and services. Sheep numbers nationally in 2020 had fallen to four million, of which 25% are mountain sheep.

Achieving the right upland solutions requires knowledge, understanding, and a commitment to work together by all the key actors. The project represents an initial exploration of how the farmer's upland habitat management knowledge and experiences might be developed. To date, very few, if any, opportunities for such learning have been made available. These new skills will facilitate farmers in implementing the sometimes-challenging management changes required to deliver a broader range and mix of goods and services. Farmers taking ownership of the need for change is critical to its success. Secondly, the project wanted to explore how to build a better relationship between the farming and non-farming Comeragh communities that could enhance the opportunity for better social, economic and environmental outcomes.

Against this background, the project developed around three innovations inspired by Brendan Dunford, the Burrenbeo Trust, Gwyn Jones, and the many Irish pioneers of Results-Based Payment Agri-environmental schemes. These were:

- Habitats/biodiversity are integral to the mountain's natural and cultural heritage; *[They are not stand-alone issues].*
- Engaging the hearts and minds of the farmers in addressing the challenges of delivering the required broader range of goods and services. *[The farmers must own the ambitions, and plans for providing the range of services needed will not be enough to achieve the necessary level of change].*
- Farmer engagement with the non-farming rural Comeragh community. *[Creating the potential for enhanced progress with rural development].*

There were three primary objectives:

1. Explore and develop an upland habitat management training module.
2. Explore the landscape & cultural heritage *(archaeology, place names, living memories and folklore)* as an integral part of the management training to engage the hearts and minds of the upland communities.
3. Explore approaches to sharing the mountain's natural and cultural heritage with the broader community.

The fourteen farmers participated in 25 days of field training with Project Team members, external experts, site visits, community-based tea talks and robust discussion group meetings in local parish halls. As a project group, we were supported in our work by a wide range of experts who gave their time freely to facilitate and deliver the training.

Project Outcomes
A potential structure and content may provide a basis for future upland field-based training activities.

Upland Reports were produced to provide a legacy and resource for the participating farmers and families. The participating farmers have a high level of ownership of the report as they were the sole authors of some sections and co-authors of the remaining ones. Their written memories and future hopes for their families and uplands and commonages are outlined in the report's introduction and provide evidence of their passion for upland farming. In addition, exploring the mountain's geography, place names, and cultural heritage highlighted their innate sense of place and pride. The report provides additional supporting information for the chapter in appendices when appropriate.

The project demonstrated that the farmer's new awareness and knowledge of the natural and cultural heritage had been increased by their participation in the project. However, it should be noted that this can be easily lost if not maintained and developed as part of the Discussion Group's annual agenda items.

The six Tuesday Tea Talks series focused on Comeragh's natural and cultural heritage and were an integral part of the training. The diversity and number of attendees provided evidence of their value as a mechanism for building relationships between the farmers and the broader Comeragh upland communities.

The farm visits, organised by the farmers, for the six Comeragh primary schools proved to be another simple but effective community engagement strategy. The Comeragh plant, bird and fauna posters developed for schools provide a lasting learning opportunity for the children and project legacy.

The extensive list (below) of those who provided support and input to the project provides evidence of the need for farmers, advisers, researchers, educators, NGOs and community members to work together in an integrated top-down, bottom-up approach. This integrated approach is required to develop capacity in upland habitat management and realise sustainable solutions for upland communities.

Eileen, Barry & Karyn (& Margaret) - DAFM
Brendan Dunford, James Moran, John Finn, Gwyn Jones – Inspiration.
Declan Byrne, Brian Dunne & Pat Dunne - SUAS project team - support
Julie Larkin, James Whelan, Brian Power & Moss O'Connor – Ecological services.
John Casey. Teagasc. **Ciaran Nugent**, DAFM; - Prescribed burning.
Hugh Carey National Monument Services – Walk & Talk.
Helen Lawless. Mountaineering Ireland - Walking with Wildlife brochure.
Enda Mullen, NPWS
James Maher Teagasc - training programme.
Rathgormack & Ballymacarbry Community Centres – Hosted Tea Talks.
Mary Dillon, Burrenbeatrust
NS Principals from 6 Comeragh primary schools – community engagement.
Hugh MacEneaney, Teagasc
Michael Desmond, Sean & Síle Murphy; Fran Igoe. Speakers Tuesday Tea Talks
Philip Murphy, LAWPRO & Cathal Somers, ASSAF – Stream walk.
Helen Sheridan, Peter O'Connell, Gaia Scalabrino, Nature, TCD
Dorothy & Anne - Teagasc Office in Dungarvan Admin support.
Anita Naughton – Teagasc

Project Key Lessons

There are minimal high-quality, evidence-based Irish studies to provide our upland farmers with a basis for their management decisions to support the delivery of the newly expanded range of environmental goods & services. Of the existing studies, most focus solely on food production.

There is a diffuse body of international information on upland management for delivering environmental goods and services. These require review to identify the relevant Irish farmer advice, information gaps and research priorities.

While the conservation objectives have been set for many uplands in the Natura 2000 network, there are no clearly defined mechanisms for achieving them. Evidence is absent, for the many unfavourable condition sites, on the practical, affordable management actions, if any, that can be used to restore these sites to favourable conditions.

For uplands outside of the Natura 2000 network, there is a widespread absence of clarity about the ecological targets and, therefore, no corresponding local management plans.

There is no evidence for the costs involved in habitat restoration or maintenance nor clarity on how they should be implemented.

The Discussion Group provided an excellent forum for learning. Its members enabled it, partly because they have worked together for almost 25 years.

Project Recommendations

There is a need to develop regionally based upland training courses for farmers on the joint delivery of market and public goods. State agencies and educational institutions should lead these. The project's training framework may provide some guidance in this respect.

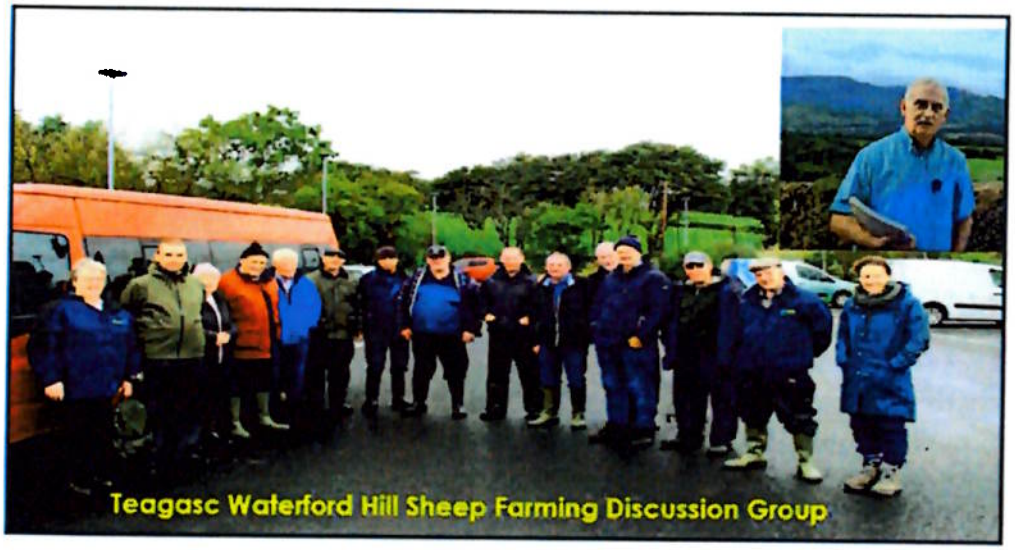
There is a critical need to build the capacity of and develop a cadre of specialist upland management advisers to mentor and support farmers in delivering change.

Consideration should be given to requiring farmers participating in future Agri-Environment schemes, to participate in a comprehensive training programme and develop an integrated production and habitat management plan in year one. The plan, in which they must have ownership, will then be implemented in the second and subsequent years of the scheme and be combined with ongoing training activities. The approach will give farmers the capacity and persistence to implement the required management changes. Evidence of the habitat responses can often be slow and not achieved within the timeframe of a five-year scheme. However, the enhanced capacity of the farmers in upland management will remain.

Develop a national participatory research and knowledge transfer programme. The programme is essential to enable Irish uplands to address the biodiversity and climate crisis. It is an urgent need if we are to meet our legally binding commitment to the Habitats Directive or realise the potential of public goods and services associated with the Irish uplands. The research and advice will provide the knowledge farmers require and the basis for their payments in delivering new environmental goods and services. The programme is essential to enable Irish uplands to contribute to the national efforts addressing the biodiversity and climate crisis

Innovative funding schemes under the new Rural Development Programme should consider targeting measures that support integrated farmer and rural community activities based on the natural and cultural heritage of the upland communities. Our results suggest that such schemes may increase the potential for the Comeragh upland communities financial, environmental, and social security.

Owen Carton, Michael O'Donoghue, Catriona Foley, Catherine Keena.
July 2022.



Foreword

This report records the outcomes of the habitat management training undertaken as part of the Comeragh Upland Communities EIP project between July 2021 and July 2022. It also provides supporting material arising from the various training sessions.

1. Introduction
An introduction to the upland written by Tom Power.

2. Geography
This section was prepared by Michael O'Donoghue, Project Geographer, following his upland Coumnagcappul walkover with Tom. It describes and maps the geography of the upland.

3. Place names
This section was prepared by Michael O'Donoghue, Project Geographer, following his Coumnagcappul walkover with Tom. It lists and maps the upland place names and their origin.

4. Monuments
The editors and Hugh Carey, National Monuments Service, Department of Housing, Local Government and Heritage, provide a backup for Hugh's monument walk on Coumaraglin and Tuesday Tea Talk in Rathgormack.

5. Rivers and Streams
The editors and Philip Murphy, LAWPRO, prepared this section following the Mahon stream walk with Cathal Somers, ASSAP a and the project farmers. It provides background information on water quality in the Ariglin (Colligan) river as it has tributaries rising on Coumnagcappul. It also outlines some best practices to reduce water pollution on the uplands.

6. Coumnagcappul Upland Bird Survey
This section was prepared by Daelyn Purcell and Maurice O'Connor, Oakwin, following their high-level bird survey on the upland.

7. Comeragh Mountain Birds, Fauna and Plants
This section was prepared by Helen Lawless, Mountaineering Ireland, and James Whelan (Oakwin) and provides information on the most common Comeragh Mountain birds, fauna, and plants.

8. Flock Management
This section was prepared by Tom and outlines his flock management.

9. The Comeragh Mountain Habitats – An Introduction
This section, prepared by the editors with support from Enda Mullen, NPWS, provides the background to the legislation around the Comeragh SAC habitats, the 2014 National Survey of Upland Habitats results, and the NPWS conservation objectives. It also lists the activities requiring consent (farming and management practices) on SAC commonage or upland.

It also summarises the main habitats in the Comeragh mountains.

10. Habitats Survey Results and Potential Actions
This section, prepared by Julie Larkin, Outwin, presents a record of her Coumnagcappul

upland assessment walkover with Tom. It describes and maps the habitats found on the upland and the potential actions to improve the condition of the habitats.

11. Potential habitat actions and shareholder response

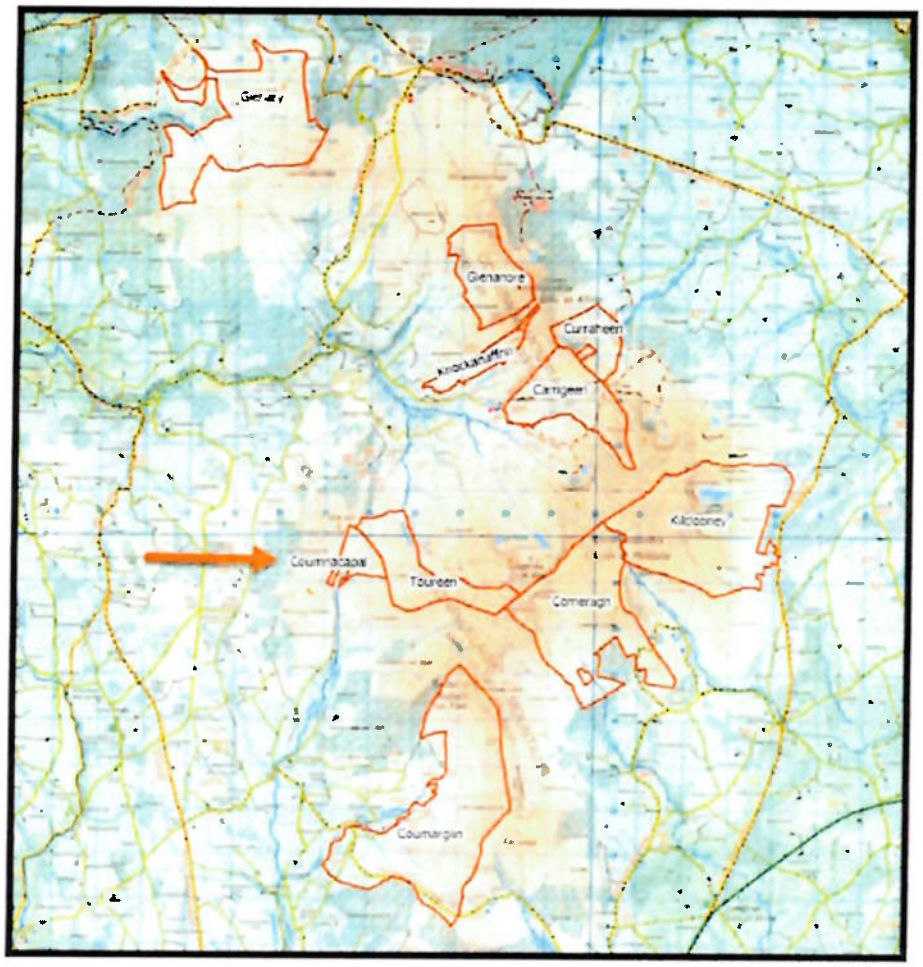
This section prepared by the editors, and Julie Larkin, provides a record of Tom's response to the potential habitat actions recommended by the ecologist.

12. Prescribed Burning Plan

This section, prepared by the editors, and Tom provides a draft prescribed burning plan that can be used by your upland and includes output from the training sessions with Kieran Nugent, DAFM and John Casey, Teagasc.

The outdoor learning environment.

1. Introduction



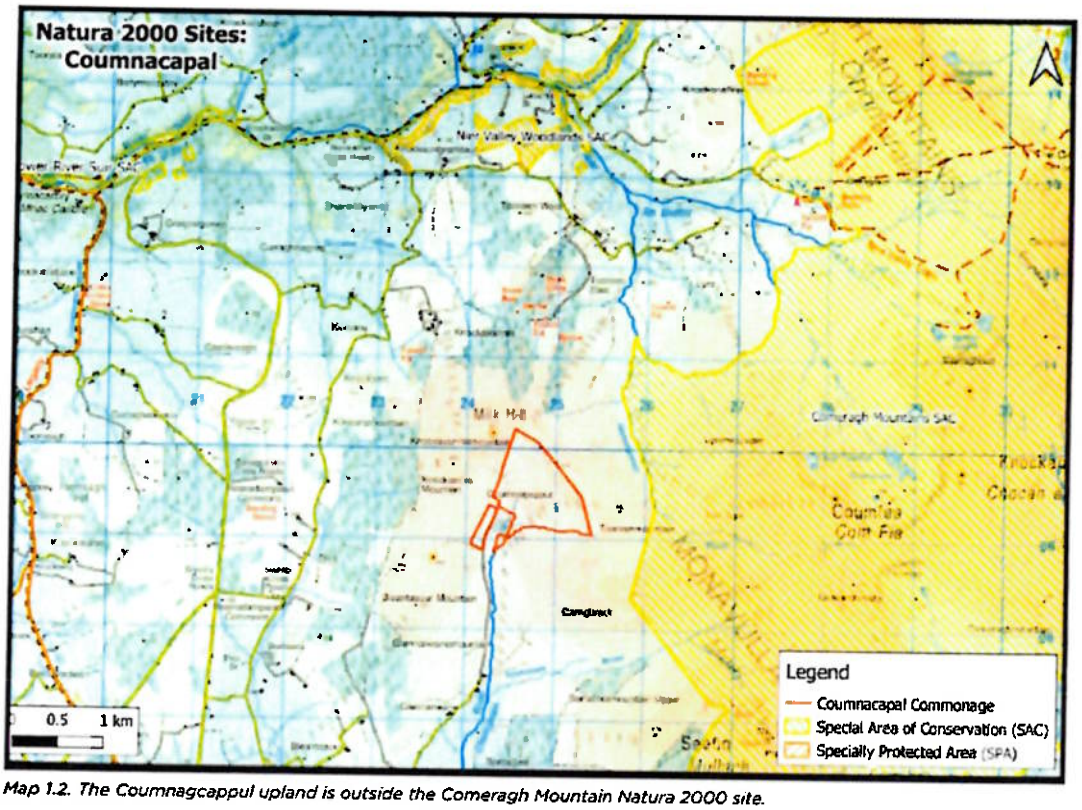
Map 1.1. The arrow marks the location of the Coumnagcappul upland on the Comeraghs.

Coumnagcappul mountain is located at the head of the Colligan River, which flows down into Dungarvan bay. The placename comes from "Com na gCapal", meaning the hollow of the horses The name is found in other areas, notably outside Killarney, the glaciated "Horses' Glen". It hints at the widespread use of horses in the past, for farming and for ferrying turf from the hill.

It is a hill sheep farm that has been in the ownership of the Power family for the past three generations. It is currently stocked with a flock of Scottish Blackface and Hiltex ewes.

Before that, the Condon family resided on this remote, desolate hillside farm. Their livestock included one pony, one cow and a handful of sheep. Today, the plot where they grew potatoes is still be seen with its raised ridges from the potato beds. The Condon family left the mountain in 1920, receiving a farm from the Land Commission. Their descendants are still farming in Langanoran and Touraneena. Their old farmyard, which fits readily into the landscape, is now used as the sheep handling yard.

Coumnagcappul is not included in the Comeragh Mountain SAC (Map 2.1).



Map 1.2. The Coumnagcappul upland is outside the Comeragh Mountain Natura 2000 site.

What is good about the Coumnagcappul upland?
Coumnagcappul upland is a considered to be a good sheep mountain with its southerly aspect and shelter.

What are the challenges on Coumnagcappul?
As with most uplands, the biggest challenge is securing a sustainable living from it.

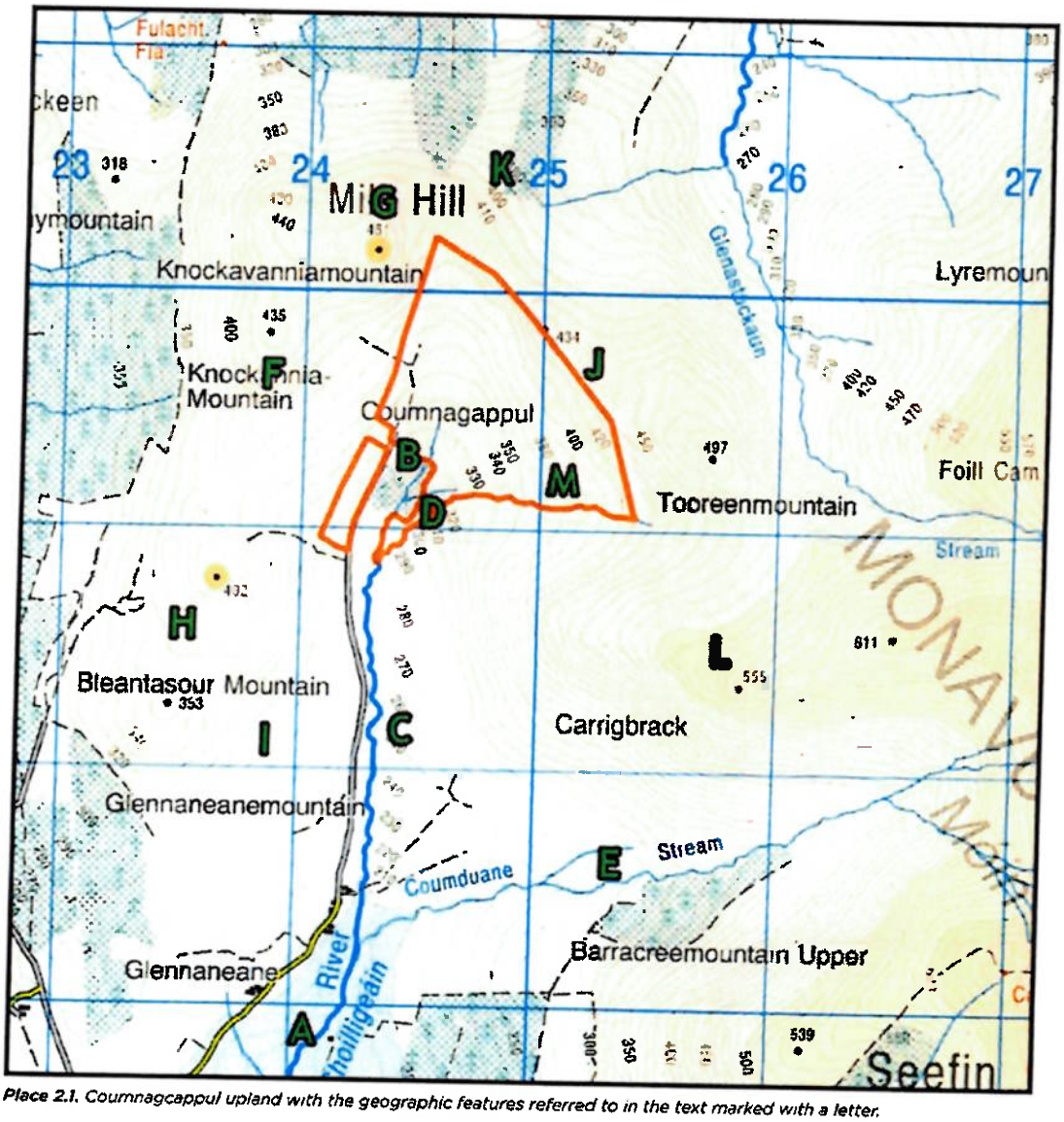
What measures must be put in place to assist flock management?
There is a need to put in place measures that will build the farmer's capacity to deliver the optimum mix of ecosystem services including on-going education and financial incentives.

2. Geography

Essentially the Upper Colligan Valley, Com na gCapall upland is privately owned, and its boundaries are defined by fencing. Triangular in shape, it sits in a gentle bowl surrounded by higher ground. The natural features which lie close to its fenced boundaries include:

- Milk Hill/Knockavannia to the north.
- The Milk Hill/Bleantasour Ridge to the west.
- The Tooreen Mountain Ridge to the east.
- The small marshy depression drained by Carrigbrack Stream to the south.

Terrain wise, the upland is gently sloping and at a relatively low elevation, between 300 and 400 m. It is naturally quite barren with a good deal of heather and strewn rocks. The main geographic feature here is **the Colligan River Valley (A).**



Place 2.1. *Coumnagcappul upland with the geographic features referred to in the text marked with a letter.*

The access road into the valley from the south reveals a very serene, pleasing to the eye, verdant scene – essentially the fields and small forest grove around the old Condon`s sheep farm. From the surrounding hills to the west, north and east, the contrast in colour between the browns of the heather-clad slopes and the green fields below is striking, and seems to add to the serenity of the place.

***Map 2.1.** Coumnagcappul from Gleann na nEan with Milk Hill behind.*

Glaciers, which played a significant part in shaping much of the Comeragh landscape, seem to have had little impact here, although the many boulders and rocks on Bleantasour Mountain outside the upland to the west and Carrigbrack Ridge to the south, suggest that during periods of ice advance periglacial processes like frost-heaving and weathering were at play in shaping the Upper Colligan Valley.

Running water is the dominant shaper of the landscape here in recent times. However, a number of small headwater streams flow off the slopes of Milk Hill and Tooreen Mountain and join up to form the Colligan River, which flows south and then east to finally drain into Dungarvan Bay after about 20 km.

The northern/upper part of the Upper Colligan Valley is called **Com na gCapall (B)**, less than 2 km further south the valley is called **Glennaneane (C)**. The two main headwater streams which form the fledgling Colligan are the 1.5 km long **Carrigbrack (D)**, and further south, just outside the boundary of this upland, the 3 km long **Coumduane (E)**.

On either side of the valley are a couple of sinuous ridges – Milk Hill/Bleantasour and Tooreen. Ridges, big and small, are created by tectonic uplift – magma currents in the earth`s mantle cause crustal rippling resulting in fold mountains. Today`s Comeragh ridges are the remnants of great fold mountains created about 300 million years ago during the Armorican orogenesis (mountain building event), although some display elements of the older physical framework created by the Caledonian orogenesis a 100 million years earlier.

The Milk Hill/Bleantasour Ridge (F) runs from north to south for over two kilometres to the west of Com na gCapall. This ridge is heather-clad and quite rocky in places, with a couple of low peaks standing up gently above the ridgeline. The highest point is found at

the northern end of the ridge on Milk Hill or Knockavannia at 451 m elevation. **Milk Hill (G)** has a flat-topped almost **plateau-like profile** and offers a panoramic view of some of its higher Comeragh neighbours. The ridge falls gradually southward, rising to **Bleantasour Mountain (H)** with its modern cairn at 402 m, and, at its southern end, to spot height 353, its south-eastern flanks called **Glennaneane Mountain (I).**

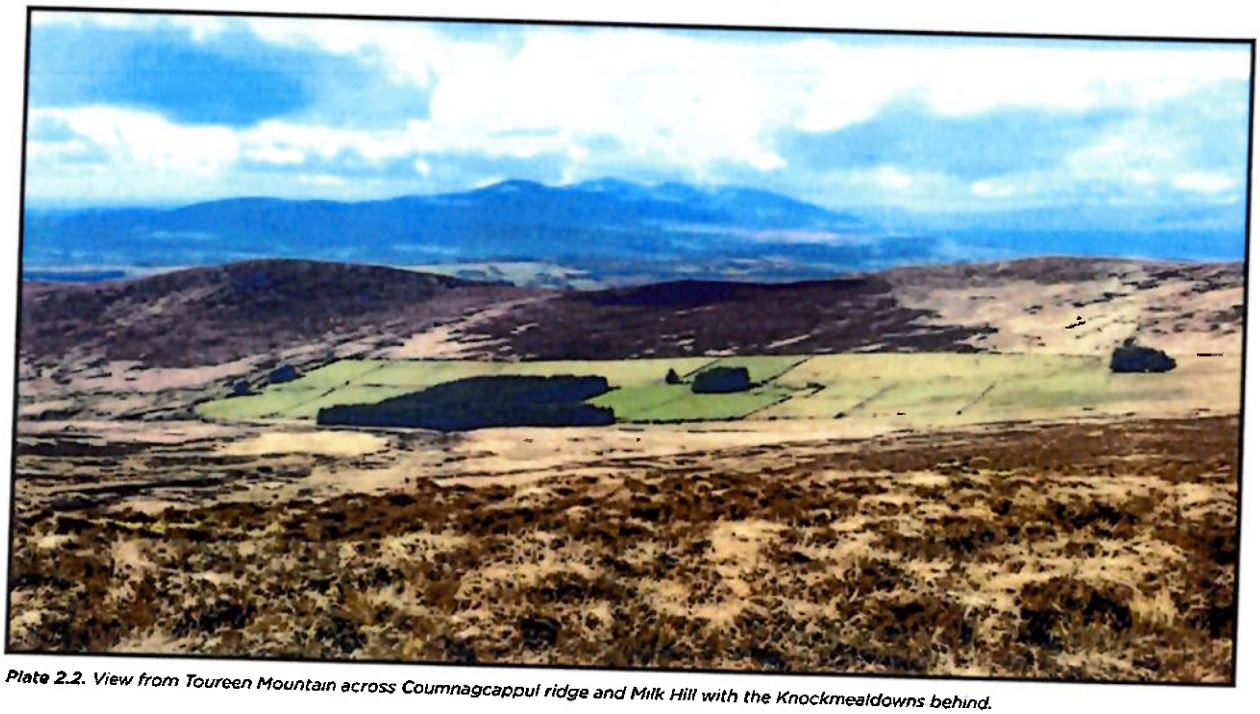


Plate 2.2. View from Toureen Mountain across Coumnagcappul ridge and Milk Hill with the Knockmealdowns behind.

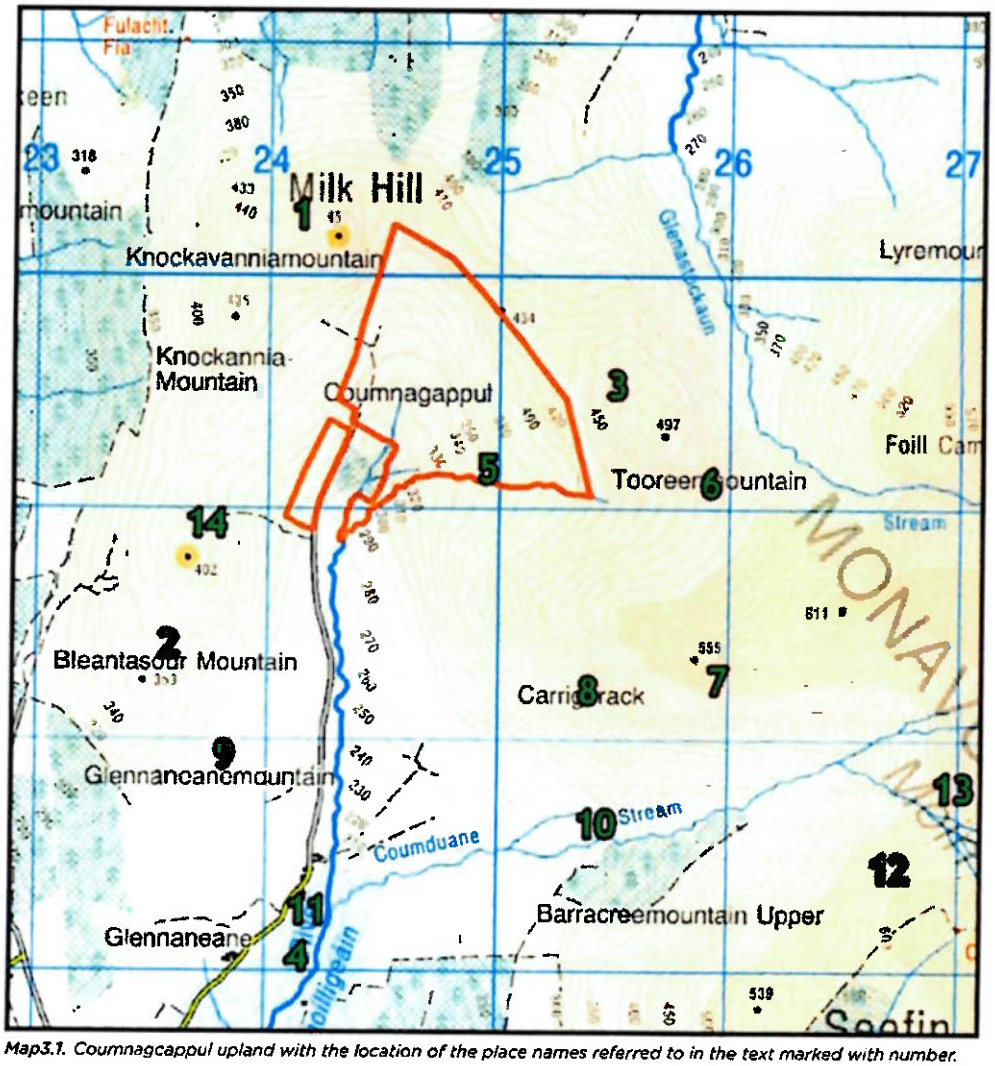
On the other side of the valley **Tooreen Mountain (J)** runs in a south-easterly direction from **the low col/saddle (K)** to the east of Milk Hill. Climbing gradually, the crestline of this ridge-like feature separates the Upper Colligan Valley from the Tooreen Mountain commonage and Glenstookaun Valley to the east. After about 2 km it reaches spot height 497, from where it rises to meet **Carrigbrack Ridge (L)**. The fence which forms the eastern boundary of Com na gCapall upland follows the crestline past spot height 434, highest point on the upland, but doesn't continue to spot height 497. Instead, it descends gradually in a southerly direction to the small stream gully of Carrigbrack Stream at the south-eastern corner of the upland.

One more geographic feature is worth mentioning. At the southern end of the upland is found **a semi-circular swale**[1], almost cradle-like in appearance, of sloping ground between Tooreen Mountain to the north and the western shoulder of Carrigbrack Ridge to the south. Called **"An Ciseán Buí" (M)**, it looks a very attractive feature from the slopes of Bleantasour on the other side of the valley, but unfortunately, it is quite marshy in places, drained by the small Carrigbrack Stream.

[1] *A swale is a shady spot or marshy place.*

3. Place Names

The placename, Coumnagcappul, comes from "Com na gCapall", meaning the hollow of the horses. The name is found in other areas, notably outside Killarney, the glaciated "Horses`Glen". It hints at the widespread use of horses in the past, for farming and for ferrying turf from the hill.



Map3.1. Coumnagcappul upland with the location of the place names referred to in the text marked with number.

There aren`t many placenames to be found on this relatively small upland area today but there are a few very interesting ones. Canon Patrick Power[2], the doyen of placename researchers in Waterford, pointed out in his "The Place-Names of Decies"[3] that many of the placenames found on mountains go back a long way and some of them may have their origins in Celtic times 2000 years ago. The Celts, he tells us, whose language was the forerunner of old Irish, were nomadic cattle herders and loved to give names to features in the natural world around them. So, when we see names connected to nature or landscape or cattle herding, we can perhaps see the hand of the Celts at play in the naming.

[2] *https://waterfordireland.tripod.com/rev__patrick_power_-_historian.htm*

[3] *http://snap.waterfordcoco.ie/collections/ebooks/106325/106325.pdf*

Three names jump out at us and suggest that they may have the "hoary antiquity of centuries" to quote Canon Power. **"Milk Hill" (1)**, also called **"Knockavannia"** or **"Cnoc an Bhainne"**, immediately suggests cattle herding.

At the southern end of Milk Hill, you have **"Bleantasour Mountain" (2).** This probably comes from "Bleantas Odhar" and has at least two possible meanings. One meaning may be brown ("Odhar") loins or a gently sloping tongue of land between two streams, the Knockboy and Colligan. Another meaning may be the brown (heather-covered slopes) milking place, the word "Bleán" in Irish means to milk.

The third name that suggests cattle herding, possibly from a long way back, is **"Tooreen" (3).** This name comes from "Tuairín" and was commonly used across Munster in medieval times to mean a hill field where cattle grazed. Let`s not forget either that the nearby Nire Valley`s name may originate from "An Uidhir", an old name for a cow.

Another very interesting and almost certainly very old placename is **"Colligan" (4)**. This comes from "Cuilleagáin" or "Coll Logáin" and means hazel hollow. The word "coll" meaning hazel is a very interesting root name from nature. The hazel was one of the first trees to colonise the land after the retreat of the glaciers 10,000 years ago. The name morphs easily into "coill" meaning wood and "cill" meaning cell or church, two other early root names.

Plate 3.1. Coumnagcappul with Tooreen Mountain and Carrigbrack behind with Ciseán Buí in between from Bleantasour Mountain. the marshy swale between Tooreen Mt on the left and Carrigbrack Ridge and the Splannc on the right.

Two other placenames of note are **"An Ciseán Buí" (5)** and **"Geatanvale" (6)**. "An Ciseán Buí", the marshy swale through which the Carrigbrack Stream flows, means the yellow basket or cradle, local belief being that the yellow in the name refers to the effect of the setting sun on the vegetation here.

At the eastern end of the Ciseán is a small col between Tooreen Mountain and Carrigbrack Ridge. Here the placename "Geatanvale" is remembered. This probably comes from "Geata an Bhealaigh", meaning the gate of the route, turf being cut on the mountain here in the past and being brought downhill along the route.

Other placenames, most of them close to but outside Com na gCapall, include:
"Carrigbrack" (7) which means the speckled rock (a very apt name for Carrigbrack Ridge in light of the effect of sunshine on the many rocks exposed along its length).

"An Splannc" (8) is a name also used on Carrigbrack, on its western and south-western slopes, and means the spark or flash, again a suitable name for the effect of the sun on exposed rocks.

"Glennaneane" (9) comes from "Gleann na nÉan" and is applied to the south-eastern flanks of Bleantasour Mountain, as well as being the name of the townland to the south of the upland – it means the valley of the birds.

Plate 3.2. Looking down on Coumduane from Carrigbrack

"Coumduane" (10) is the impressive valley that lies over a kilometre south of Com na gCapall. Canon Power tells us that the name comes from Com Duáin and means the kidney or hook shaped hollow, from the word "duán". Local people call the valley the **"Dún"**, which means the fort. Which is it? Certainly, the words dún and duán sound very similar!

"Ladhar an Dúin" (11) is the name given to the junction of the Coumduane Stream and the Colligan, from the word "ladhar" which means river junction.

"Barrachree" (12) is the name of the forested mountain to the south of Coumduane. The name comes from "Banrach an Fhia", according to Canon Power, and means the deer pen. Incidentally, there are a couple of animal pens in Com na gCapall which are called **"Bodhrachs"** by local people.

"Clais an Mhullaigh" (13) means the dyke at the top. Locally known as **"The Cuts",** it is the name given to a couple of intermittent feeder channels of the Coumduane stream, located high up on the slopes of Barrachree.

Crua Cruach or **"Cruach Chrua" (14)** is another name used on Bleantasour Mountain. It means hard projecting rock pile and is a very suitable name for this hill, in the light of all the rocks strewn high up along its eastern flank.

4. Monuments

Prehistoric civilisations did not leave behind written records, so we cannot read about them. The Comeragh mountains have a long and fascinating history of human occupation stretching back over 6,000 years. Archaeology helps grow our knowledge and understanding of the people who lived on the mountain over that long period.

The monuments tell us about social life, religious beliefs, culture, and people's knowledge in the period the monuments were built. They are our heritage and a symbol of pride and give local communities a sense of identity. In a way, they provide life to our past, so preserving and protecting them is a sign of respect.

If you want to see if there are any archaeological monuments on your land, the Historic Environment Viewer (HEV) on the National Monument Services (NMS) website should be your first port of call. (https://www.archaeology.ie/archaeological-survey-ireland). However, it is important to remember that the HEV will only show the monuments known to the service.

Farmers know their land and landscape better than anyone else. If you, as a farmer, think there is something that may be a monument or looks like a monument rather than having been put there by nature alone, it might be an unrecorded monument. The NMS would appreciate reports of such features and would add them to the HVE if they are likely to be archaeological.

On our upland monument walk with him, Hugh Carey of NMS highlighted that the way to locate or find an archaeological monument is to go out and look for one. A variation in the land may identify the location, for example, a rise, a dip, ridges, or changes in the vegetation to physical remains, such as stone or wall footings. If you believe you have archaeology on your land that is not shown on the viewer, you can contact NMS.

Guidance on good farming practice and archaeology can be downloaded from https://www.archaeology.ie/sites/default/files/media/publications/good-farming-practice-and-archaeology.pdf

Most archaeological monuments marked on the HEV receive statutory protection under the National Monuments Acts, 1930-2014.

The monuments must not be damaged or destroyed, and ground disturbance should not occur at or near them.

It is interesting to remember that farming was one of the first essential developments in the history of man. The cultivation of crops and domestication of animals originated in the Middle East about 12,000 years ago and gradually spread across Europe, reaching Ireland around 4000 BC. The new concept of farming was brought to Ireland by early immigrants from Europe. This period is referred to as the Neolithic or New Stone Age.

Farming began in Ireland with the domestication of goats, sheep, cattle and pigs and the cultivation of a primitive form of wheat and barley. The hunter-gatherer population adopted it over time because it provided a more reliable food source for them and their families.

The first farmers cleared dense oak and elm forests to plant crops and enable their animals to graze. Many early farming sites favoured sheltered places near water sources. It created a year-round food supply and allowed people to live in permanent settlements, although hunting and gathering wild foods remained important and provided supplementary foods.

Archaeologists occasionally discover remains of the houses of some of the earliest farmers and their burial monuments, seen in such places as Coumaraglin. They are the earliest standing archaeological monuments in the County Waterford.

No monuments are recorded on Coumnagcappul on the National Monuments Service's Historic Mountain Viewer[4].

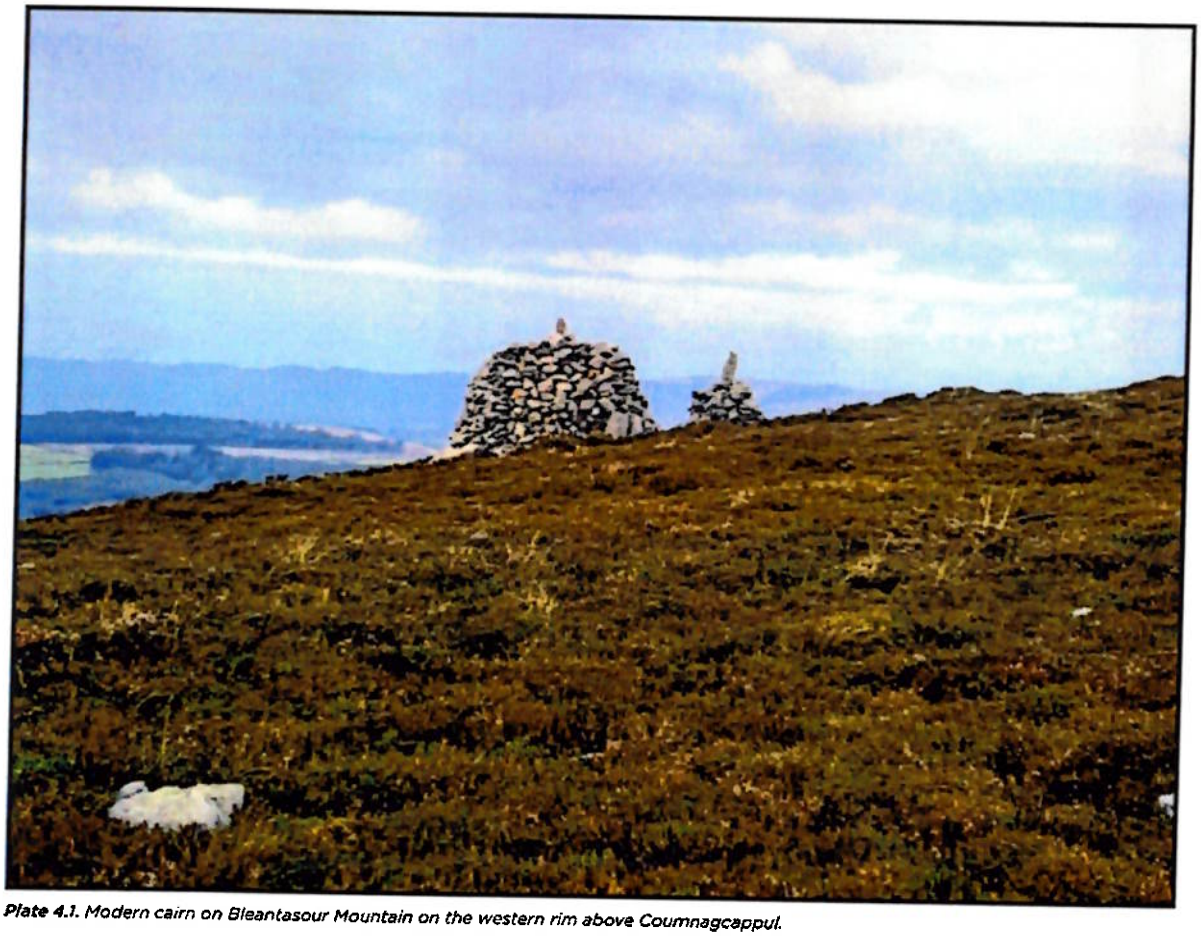
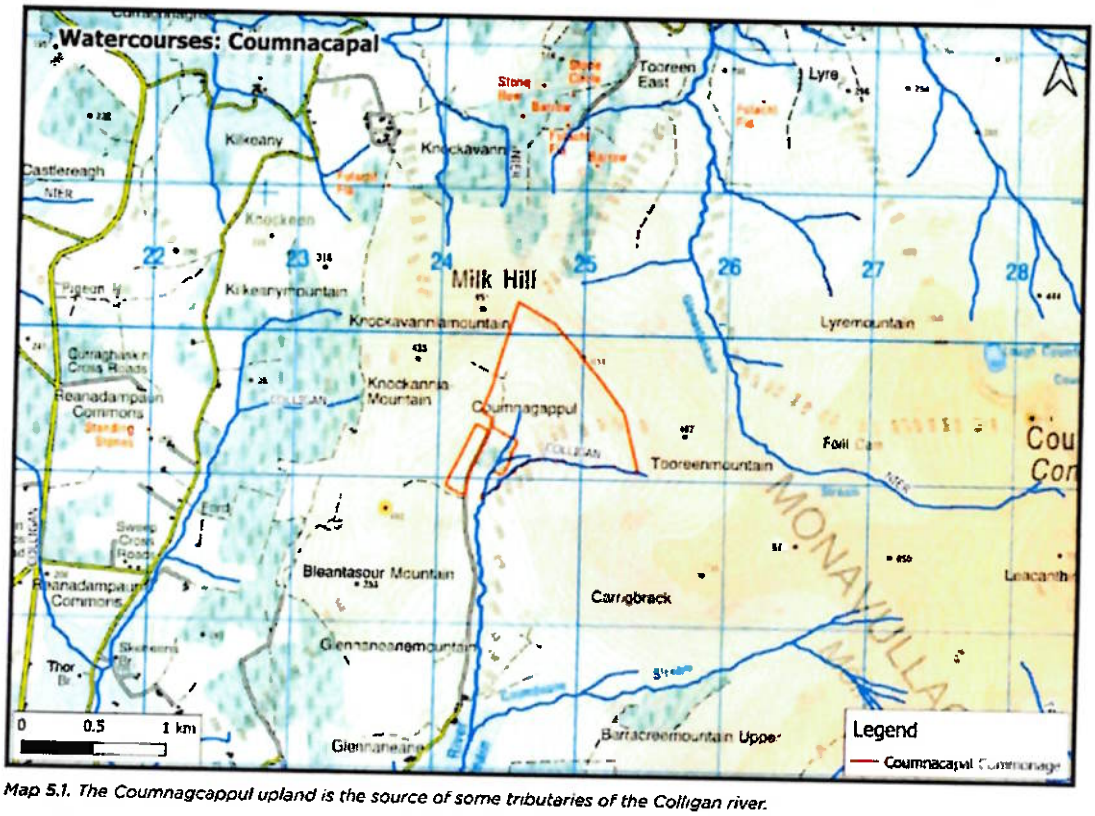


Plate 4.1. *Modern cairn on Bleantasour Mountain on the western rim above Coumnagcappul.*

[4] *https://maps.archaeology.ie/historicenvironment/*

5. Rivers and Streams

One river, the Araglin, has a tributary, Colligan, that originates on Coumnagcappul



Map 5.1. The Coumnagcappul upland is the source of some tributaries of the Colligan river.

The Araglin River is located about twenty minutes (14 km) north of Dungarvan. The Araglin river contains the Colligan_010 water body. It is located near Coum, Kilbryan Upper in Co. Waterford. Rising on Seefin Mullach, the Araglin catchment part of the Comeragh Mountains SAC, is also a proposed Natural heritage area (pNHA)[5].

The only monitoring point for the waterbody is Come Bridge. The Q- value trend fluctuated during 1987-2019 between Good (Q-4) and High (Q-5). Good status was recorded in 2001, 2007 and 2013, with high status achieved in 2004, 2010 and 2019. With the water body meeting Good Status regarding chemical and biological indicators, no mitigation measures are required for this catchment.

The soil type is a combination of poorly and freely draining with a small pocket of blanket peat at the source of the water body. The underlying aquifer is a Locally Important Aquifer[6], which is only moderately productive and found in the Devonian Old Red Sandstone bedrock.

The dominant land use is agriculture (pasture) with forestry, confined to the upland region of the catchment, accounting for about a third of the land use.

[5] *Sites published on a non-statutory basis in 1995. They are sites of significance for wildlife and habitats. They will be reviewed in due course and formally designated as NHAs or pNHAs.*

[6] *Capable of supplying locally important abstractions (e.g., smaller public water supplies, group schemes), or good yields (100-400 m3/day).*

Water quality and measuring it. After many years of steady improvement, Ireland is experiencing a sustained decline in water quality. More robust measures are now required in response. The good news is that water management benefits biodiversity and climate mitigation.

The EPA national monitoring programme takes water quality assessments every 10 to 20 km of the river's main channel. These assessments reflect the health of the surrounding catchment. Although this is a sound basis for measuring the changes and differences in water quality between rivers and different sections of rivers, it does not help narrow down the source of pollutants in a river.

Organisations such as the Local Authority Waters Programme (LAWPRO) address this issue by working on the stretches of the river between the 10 – 20 km monitoring points of the EPA's monitoring stations. It involves working on the smaller tributaries of the main channel. Where significant impacts are identified on the tributary, they are addressed by implementing measures to reduce the impact.

The Q-value score method determines the biological quality of a river or stream. Aquatic macroinvertebrates are insects in their nymph and larval stages (e.g., Mayfly), snails, worms, crayfish, and clams that spend at least part of their lives in water. They form part of the stream's or river's biodiversity and are vital in maintaining the water ecosystem.

The occurrence and number of different macroinvertebrates species provide a way to assess the pollution status (Figure 5.1). Those in group 1 signify good water quality, those in group 2 exist in a wide range of quality water conditions, and those in group 3 signify polluted water. The Q-value score indicates the pollution in the water ranging from Q1-Q5, with Q1 being seriously polluted and Q5 being unpolluted (Table 5.1).

The EU Water Framework Directive (WFD) requires all Irish waters to achieve good status by implementing the River Basin Management plan 2022 – 2027. The WFD status ranges from high to bad depending on the Q-value score (Table 5.1). The Q-value score provides the Q status of the river or stream. Ireland has a three-year cycle of surface water monitoring to assess our progress toward achieving the WFD target of good status.

The EPA uses five colour codes when mapping rivers and streams that reflect the water quality (Table 5.1).

Q-Value Score	Pollution Level	WFD Status	Colour Code for WDS Maps
Q5	Unpolluted	High	Blue
Q4	Unpolluted	Good	Green
Q3	Moderately Polluted	Moderate	Yellow
Q2	Seriously Polluted	Poor	Orange
Q1	Seriously Polluted	Bad	Red

Table 5.1. The Q-value score and the corresponding level of pollution and WFD status.

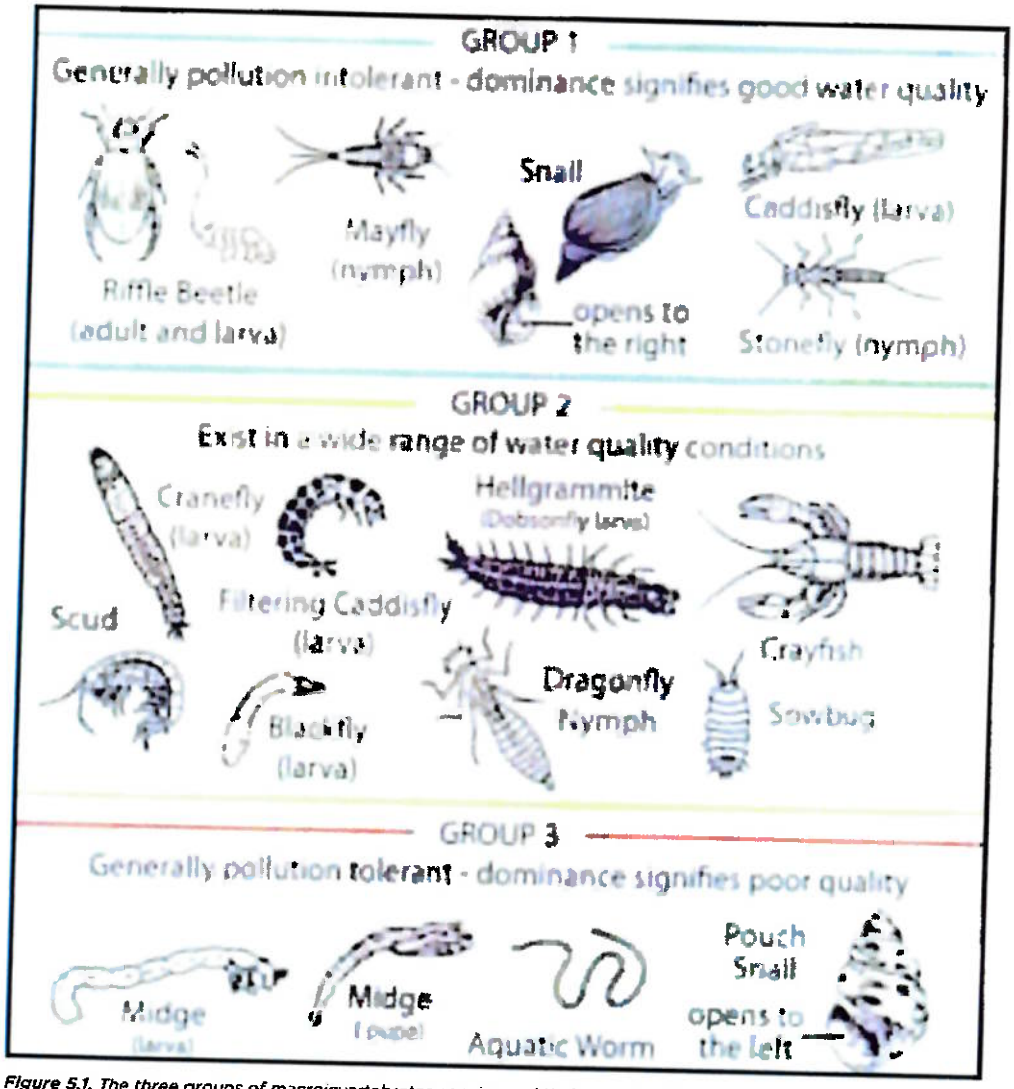


Figure 5.1. The three groups of macroinvertebrates species and their associated water quality.

Plate 5.1. Philip Murphy explained to members of the Project Team the art of assessing the Q-value score of a river or stream water sample by identifying the macroinvertebrates.

The appendices below provide best practice advice for upland farmers for some of their activities that potentially impact water quality negatively.

Appendix 5.1. Best Practice for the management of spent sheep dip and footbath solutions[4].

(Also, see video on YouTube https://www.youtube.com/watch?v=KaRlcbmvFLc)

Sheep dips such as Organophosphates (active ingredient = diazinon) and Pryrethroids (active ingredient = cypermethrin) are highly effective in eliminating and preventing several serious sheep ectoparasites. These include blowfly (bluebottle) strike, lice, keds, ticks and sheep scab.

When cypermethrin is detected in our streams and rivers, we can conclude that the aquatic living insects will have been eliminated. It has severe consequences for the health of other species (fish, birds, small mammals, humans) that rely on aquatic insects as part of the overall food chain.

Therefore, before you organise your next sheep dipping day, follow the best practice sheep dipping guidelines with water protection in mind.

The insects in our streams are part storytellers and we use them to provide us with an indicator of water quality.

1. Make sure you choose a cool, dry day with relatively good drying conditions.
2. Identify your holding field/ paddock for your sheep after dipping. There should be no open drain or watercourse within or adjacent to this area.
3. Check that your dipping tank is sound and leak-proof, with no structural cracks or defects and has no outlet pipe or valve at the tank's base.
4. Sheep should stand for 10-15 minutes in the adjacent drip pen standing area (concreted) when they emerge from the dipping tank to allow the dripping solution to funnel back to the tank.
5. Sheep should be kept in the holding field/paddock for at least 24 hours to ensure they dry effectively and prevent any chance of any sheep accessing or crossing watercourses and product ending up in a drain or watercourse.
6. After dipping, wash and brush the dung from the adjoining drip pen stand thoroughly to ensure no debris, including wool, enters any drain or waterbody. The brush should be soaked in water a few times and rinsed well. Empty dip containers and opening caps/ foil should be safely disposed of after use, following the manufacturer's instructions on the datasheet.
7. **In hill areas, some farmers may not have access to a slurry tank on the farm. However, sheep dip must be disposed of in a tank for dilution and spreading.**
8. These recommendations also relate to pour-on, which uses active ingredients such as cypermethrin. **When sprayed on the fleece, pour-on should dry effectively before allowing sheep to go back to open hills, mountainous areas,** or any lowland areas where watercourses are present. As with dipping, sheep should be kept in the holding field/paddock for at least 24 hours before returning to hill or lowland areas containing watercourses.
9. Injectable products to control ectoparasites should be considered where dipping is not feasible. Please check and consult with your local veterinary practitioner for advice.
10. Mobile showers or dipping is also an option, and the same principles apply.
11. Please read the manufacturer's instructions on the datasheet carefully regarding health and safety procedures when using and disposing of footbath products.
12. **Products such as Formalin may cause cancer, whereas Copper Sulphate is toxic to plants and animals at high levels and impacts soil microorganisms. Zinc sulphate is a heavy metal and very harmful to aquatic life.**

[4] *https://www.teagasc.ie/news--events/daily/environment/best-practice-on-spent-sheep-dip-and-footbath- solutions.php*

SPENT SHEEP DIP MUST NEVER BE DISPOSED OF TO A SOAK PIT OR DUMPED ON SACRIFICE LAND.

It must be land spread - diluted 1 part dip to 3 parts slurry or water at a rate not exceeding 5,000 litres/ha (440 gallons per acre) of spent dip. The diluted mix should be applied at 20,000 litres/ha (1,760 gallons per acre) of diluted dip.

For example, if you had 1,000 litres of spent sheep dip you would have to dilute it with at least 3,000 litres of water or slurry before spreading.

Spent sheep dip must be land spread as soon as practicable after use.

All precautions pertaining to the spreading of animal manures are also applicable.

Farm livestock should be excluded from the disposal area for at least 28 days.

Empty dip concentrate containers must be rinsed when dip is being prepared so that rinsing liquid may be added to form part of the diluted dip.

Where there is an outlet at the bottom of an existing tank, controlled by a stopper, the outlet must be permanently sealed.

13. Overflow of footbath solution must be collected, and the bath should be covered when not used.
14. **Spent footbath solution from portable footbath trays should be emptied into a tank, not directly to a soakaway or on sacrifice land.**
15. The used solution may be spread to land if it is dilute (1:3) and applied at a very low rate and only on land areas with a low water pollution risk. Some animals and birds may be susceptible to the toxicity of footbath solution, so livestock must be kept away from areas sprayed. **Do not let livestock graze in these areas for at least one month.**
16. A licensed specialist waste disposal contractor must dispose of the unwanted concentrate. Contact your local authority for more information on licensed contractors.

A single drop of pesticide in a small mountain stream can breach the drinking water limit for 30 km

Appendix 5.2. Best Practices for the prevention of contamination of water with pesticides[5].

Therefore, no pesticide residue or runoff must go into watercourses, causing contamination.

Pesticides can reach water in:

- **Spray drift.** Contamination can be minimised by considering wind strength and

direction and utilising buffer strips/no-spray zones.

- **Runoff.** It happens if pesticides are applied to the frozen, wet or compacted ground, especially if it rains soon after application. The pesticide can either be dissolved in runoff water or attached to soil particles and carried in the water.
- **Drain flow.** It happens if pesticides are applied when soils are very dry/cracked or very wet/saturated. Any rainfall can then flush the pesticide through the soil, either dissolved in water or attached to soil particles

To prevent contamination of water supplies:

- Ensure all pesticide application tasks are done by trained and qualified staff.

Aquatic buffer zones are a legal requirement and are available on the product label, they are typically between 5-10 m but can be as much as 70 m.

Ensure there is a buffer zones adjacent to any water sources that are used for human consumption or ground water vulnerable areas of:

Water Supply for Populations of	Buffer Zone
500 or more people	200m
50 to 500 people	100m
10 to 50 people	25m
10 people or less	5m

- Know the location of drains, watercourses and vulnerable groundwater before spraying.
- DO NOT spray near watercourses.
- Prepare pesticide solutions carefully, in an area away from water sources and drains for mixing, loading, and cleaning equipment and containers.
- Always try to use targeted treatments.
- Do not apply pesticides when it is raining or windy (greater than 7 km/h) or when rain is forecast within 24 hours to avoid runoff.
- Ensure all equipment is maintained correctly, in good working order and calibrated.
- Prevent drift while spraying by using low drift nozzles or shrouded booms whenever possible.
- Have an emergency plan and kit available for any spillages.

***Appendix 5. 3** Best Practices for preventing water contamination from grazing, supplementary feeding and prescribed burning.*

[5] *https://www.pcs.agriculture.gov.ie/media/pesticides/content/plantprotectionproducts/stripe/STRIPE%20How%20to%20use%20STRIPE%20guidelines.pdf*

Habitat Type	Stock Rate Ewe equivalents per ha
Upland Grassland	1.5 to 5
Dry Heath	1 to 1.5
Wet Heath	0.75 to 1
Blanket Bog	0 to 0.75

Grazing pressure: Overstocking on the uplands reduces vegetation cover and damages soil structure. It leads to an increased risk of runoff and erosion and reduced water quality. Therefore, upland farmers should use sustainable sheep stocking rates for the different habitat types.

Upland farmers should be aware of overgrazing on the uplands, particularly during winter. The evidence for these stocking rates reducing the potential impact on water quality is poor.

Supplementary feeding: Apart from the poaching damage, silage and concentrates can increase the concentration of nutrients in the manure and create an increased risk of nutrient loss to water on the uplands. Where the supplementary feeding areas are closely connected to a water body, it has the potential to act as a direct source of nutrients, sediment, and dissolved organic carbon, as well as other pollutants mobilised with eroded sediment. Removing dissolved organic carbon (brown colour) is expensive in water treatment plants for towns.

Avoid poaching and supplementary feeding in an area close to a water body. The advice is to use hay, silage, or mineral licks with low phosphorus content and only use them when needed. However, the evidence for this advice is based on common sense rather than research on the uplands.

Burning: There should be no uncontrolled burning of the uplands as it can lead to the loss of ash and soil sediments to water. Only prescribed burning should be used and follow the guidelines[6]. Therefore, it is essential to consider the location of water bodies when considering a prescribed burn.

- Vegetation at the edge of waterbodies protects banks from erosion and reduces water and sediment runoff.
- Fire-free buffer zones should be established:
  - 2 m wide for watercourses less than 2 m wide.
  - 5 m wide for rivers more than 2 m wide and lakes.
- Watercourses should not be used as primary firebreaks. In an emergency, they can be considered a backup to cover the failure of a primary firebreak.
- Techniques to ensure low fire intensity can increase the effectiveness of firebreaks. Wetter vegetation or dips in the ground beside watercourses may be suitable as firebreaks. Cutting may also be used to create firebreaks.

Water Catchments

- Additional precautions or restrictions may be required in some circumstances in catchments used for drinking water or where there is a high flood risk.

6. Bird survey – Coumnagcappul

An ecologist undertook a high-level bird survey on Coumnagappul upland and the Toureen commonage. The survey methods included mini-Vantage Point Count (VP) and walking transects. It was designed to quantify flight activity and distribution over the survey area. The survey involved standing on a fixed-point location with an excellent overview of the survey area terrain.

Table 6.1. Toureen commonage and Coumnagcappul upland VP 1 Site Details

Date	**05/10/2021**
Start Time & Finish Time	13:00 & 16.00
Visibility: Rain; Cloud cover	Good > 2km; No rain; 70%
Temperature:	10 Degrees
VP Location:	S 27720 08333

No sightings were made in either the mini-VP or transects walkings. The result can be attributed to strong winds on the day of surveying, temperature conditions, and the time of year. Passerine[7] numbers were very low in these areas, inferring a decline in visible predator species.

It was concluded the commonages and upland offer ample foraging opportunities for several species. The area outside Coumnagcappul is particularly good, which needs to be focused on as the upland is very small. The centre of this commonage and upland holds areas of improved grassland, forestry and farm buildings.

[7] *Sometimes known as perching birds or songbirds, passerines are distinguished from other orders of birds by the arrangement of their toes (three pointing forward and one back), which facilitates perching.*

7. Birds, Fauna and Plants of the Comeraghs

Comeragh Mountain Birds. This section provides an overview of the most common birds in the Comeragh mountains. The birds included in the list below are classified based on their conservation status. There are three classifications, Red, Amber and Green.

RED: Species which are 'Globally Threatened', of global conservation concern in a European context, that have experienced severe historical or short-term declines in breeding populations without recovery, severe non-breeding population declines, or severe decline of breeding territory.

AMBER: Species of unfavourable conservation status but not necessarily globally have experienced moderate historical or short-term declines in breeding populations, moderate non-breeding population declines, and moderate decline of breeding territory or rare breeders in Ireland.

GREEN: Species that do not meet the above criteria for Amber or Red Status.
The conservation status for the ten most commonly found birds on the Comeraghs is provided.

Kestrel RED
Pocaire Gaoithe
Falco tinnunculus
31-37cm

Kestrels are best known for their ability to hover effortlessly when hunting small mammals and birds. Observed year-round, they find suitable habitats in bogs, heathland and grassland. A medium-sized falcon has long wings, a long tail that spreads like a fan, and light-brown back feathers & inner upper wings that contrast with much darker upper outer wings. Males have a fine blue-grey head while females have a brown-streaked head. Breeding takes place in the Comeraghs, and eggs are often laid in the empty stick nests of other birds.

Hen Harrier AMBER
Cromán na gCearc
Circus cyaneus
45-55cm

These raptors have had stable breeding populations in theregion for forty years, tending to ground-nest in high-quality heather moorland and young forestry plantations. Courtship entails a spectacular aerobatic display called the sky dance. In March and April, males fly high in the sky, then freefall and perform spins and somersaults to demonstrate their incredible stamina, agility and prowess to potential females. Open habitats such as heathland provide for Meadow Pipits and Skylarks, the preferred diet of harriers. Though males have the more distinct blue-grey and pale plumage with jet-black wingtips, females are the larger birds and fly with wings held in a shallow 'V'.

Common Buzzard GREEN
Clamhán Comónta
Buteo buteo
48-56cm

One of our most common birds of prey, buzzards, are often heard before they are seen with a loud mewing call that falls in pitch during flight. They are medium-sized raptors with broad, rounded wings and a short neck and tail. They can be observed soaring on warm thermals with a fanned tail, and outer wing feathers spread, sitting on fences or telegraph posts. Small mammals, birds and carrion are all components of a buzzard's diet but can switch to earthworms and large insects if food is in short supply. This generalist diet and access to open farmland and moorland has enabled their incredible rise in numbers, considering they were absent from the island between the mid-1800s to 1933.

Sparrowhawk GREEN
Spióróg
Accipiter nisus
29-41cm

Sparrowhawks, considered the most common bird of prey in Ireland, are widespread in woodland, farmland with woods and larger parks and gardens. They rely on the element of surprise and can manoeuvre around trees and hedges to prey on small garden birds or pigeons. Sparrowhawks prefer to nest in dense woodland and breed in May and July. Until the chicks can be left unguarded, the male does all the hunting, feeding both the chicks and the female. They are on the smaller side, with broad wings, long tails and long, thin yellow legs and eyes.

Peregrine Falcon GREEN
Fabhcún Gorm
Falco peregrinus
38-45cm

The Peregrine Falcon is famously the fastest animal in the animal kingdom, reaching over 300 km/h, 6.7 times faster than Usain Bolt's top speed. This extraordinary feat has been witnessed at Coumshingaun, likely due to the high cliffs and opportunity to launch attacks. They lock on to their target, including songbirds, pigeons, ducks or waders, and knock them out in mid-air in a stoop dive. While they are now taking advantage of the vertical landscape of towns and cities, coastal and inland cliffs are still their mainstay. Peregrines are still recovering from a steep decline in the 50s and 60s related to pesticide poisoning, which is now banned.

Red Grouse RED

Cearc/Coileach Fraoigh
Lagopus lagopus hibernicus
33-38cm

Red Grouse is a threatened species in Ireland, experiencing a 50% decline in national distribution between the early 1970s and 2008. A combination of habitat loss through afforestation, large-scale peat extractions and a reduction of heather from overgrazing by sheep and burning have been significant factors in the decline. Red Grouse are now limited to upland blanket bogs and heaths and some raised bogs in the midlands. They primarily feed on young ling heather shoots (Calluna vulgaris) year-round. They are plump, ground-nesting birds - males have dark chestnut plumage, a loud guttural call warning others to 'stay back' and a red eye comb, while females have an altogether subtler colouration and call.

Raven GREEN

Fiach Dubh
Corvus corax
54-67cm

Ravens are Ireland's largest crow and songbird, slightly larger than a Buzzard. They can be distinguished from other species in the same family in flight by the projected neck and diamond-shaped tail-tip. Like other corvids, ravens have a generalist diet that can include berries, grain, small mammals, and birds but use their curved bill to retrieve insects, larvae, worms, and subterranean invertebrates from the ground. While widespread in Ireland, ravens prefer upland habitats as they provide more nesting opportunities. An early breeder (February/March) pairs mate for life and nest on clifftops or tree crowns.

Chough AMBER

Cág Cosdearg
Pyrrhocorax pyrrhocorax
37-41cm

Choughs are easy to identify. The Irish name for Chough (Cág cosdearg) means "red-legged Jackdaw" due to their black plumage, red legs and bill (bill can be yellowish-brown in juveniles) and are likely to be seen on rocky coasts or in upland areas with short grassland. They specialise in feeding on soil invertebrates, insects and berries. Highly accomplished fliers, their flight pattern can include barrel rolls, steep swooping dives and soaring on updrafts beside cliffs. They nest where there is little chance for predation or disturbance, in the mountains with steep ravines and cliffs or Brian even coastal caves.

Golden Plover RED
Feadóg Shléibhe
Pluvialis apricaria
25-28cm

Whether winter visitors from Iceland or summer visitors from Spain or France, Golden Plovers arrive in their thousands each year and are regularly found in large, densely packed flocks. Usually seen from October to February, winter birds are widespread and utilise lowland fields and coastal lagoons. Summer birds prefer heather moors, blanket bogs and acid grasslands but typically breed in the country's northwest. They feed principally on beetles and earthworms and eat other soil invertebrates, berries, grasses, and seeds. Winter birds are buff in colour, with a pale throat, chest and belly, while in summer, adults take on a grand, speckled gold and black plumage with a black throat, chest and belly.

Meadow Pipit RED
Riabhóg Móinéara
Anthus pratensis
14-15cm

Even though their numbers have remained relatively stable in Ireland over the past two decades, they have experienced significant declines globally due to agricultural intensification. They also take a hit after very cold winters and take up to two years to regain their numbers. Meadow Pipits are common nesting birds in moorland, heathland and rough pasture. In winter, they tend to move in flocks to lowlands on farmland and salt marshes. They are small, streaky and yellow-brown and can be distinguished by their pale, flesh-coloured legs, compared to the blackish legs of the Rock Pipit. A fluttering, 'parachute' display flight can be seen during courtship.

Skylark AMBER
Fuiseog
Alauda arvensis
16-18cm

Skylarks are highly recognisable if seen in song-flight. Their song is a distinctive continuous stream of warbling notes and can be heard from February to June. Skylarks tend to sing while 50-100m and can last up to half an hour. In between the size of a sparrow and a starling, they are streaky brown birds with a small crest that can be raised when the bird is excited or alarmed and a white-sided tail. Breeding takes place in upland heaths, ungrazed grasslands and cultivated areas. Although Skylarks have experienced national breeding population declines, breeding pairs in the Comeraghs have remained stable.

Wheatear AMBER
Oenanthe Oenanthe
Clochrán
14-16cm

Wheatears are summer visitors and passage migrants from southern and central Africa who can be seen from March to early October. Their breeding distribution is concentrated towards the west and north of Ireland. Still, it will settle in suitable habitats such as upland bogs, short grassland mosaics with exposed rock and pasture with stone walls anywhere. When seen in flight, the tail pattern is distinctive - a black 'T' on a white rump. Males are smart-looking birds with blue-grey backs and heads, black wings, black cheeks, white eyestripes, and pale orange chests. Females are browner, and juveniles are speckled.

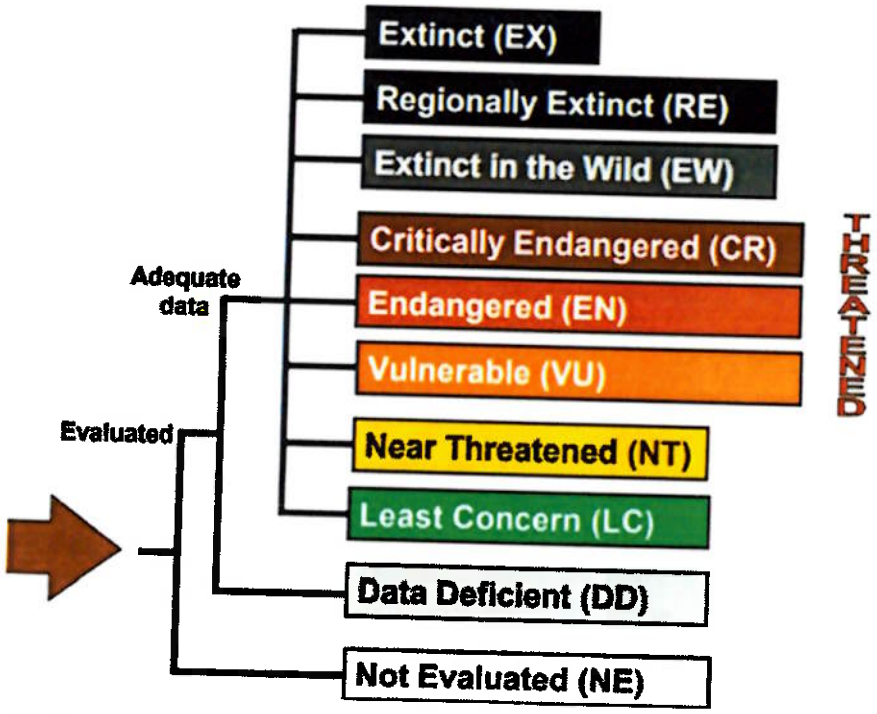
Stonechat GREEN
Caislín
Saxicola rubicola
12-13cm

Stonechats are a common sight along the coast, in areas of scrub and heathland, often perching on top of bushes or fenceposts. Their name comes from their call, reminiscent of two stones being tapped together. The same size as a Robin, males have a black head, a white neck collar, burnt sienna underparts and a striped black and brown back. Females are similar but have a dark brown head and back. Stonechats breed where there is scrub, such as in Gorse or Bracken cover. They feed on seeds, fruit such as blackberries and insects and fly a short distance from a perch to catch prey.

Snipe RED
Naoscach
Gallinago gallinago
23-28cm

Snipe are widespread resident waders, but numbers are bolstered with winter migrants arriving from northern Europe. During the breeding season, they are more commonly sighted in uplands. Snipe are often found in wet grassland, and wetlands use their long probing bill to find earthworms, crustaceans, and insects in the mud and swallow their prey. Males perform an aerial courtship display and make a sound that resembles 'drumming' or a bleating goat. This sound, however, is not vocal. It is produced by stiff feathers sticking out at the tail, which vibrate as the male performs aerobatic manoeuvres in the air.

Comeragh Mountain Fauna. This section describes the most common fauna found on the Comeraghs. The NPWS publishes red lists for most groups of animals in Ireland. While the criteria for reaching an assessment conclusion are slightly different, all species fall under the same ten categories for assessment. The assigned category for the species below is a national assessment by the NPWS[10].



Highly Protected The species is strictly protected everywhere in the country as well as in potential breeding habitats (Annex IV of the EU Habitats Directive)

Protected The species is protected in some form, whether by the EU Habitats Directive or the Wildlife Act 1976/2000

Red Fox
LEAST CONCERN | Protected
Madra Rua/Sionnach
Vulpes vulpes
Length (incl. tail) 100-120cm

Red foxes are cunning, stealthy and overall charismatic animals. Members of the sub-family Caninae are an actual fox distinct from the genus Canis, containing domesticated dogs, wolves, and coyotes. It is a highly adaptable species found across Ireland in a wide range of natural and urban habitats. While some foxes form a home range where they become residents, others live nomadically and roam from one place to another. Foxes mate between December and February, and vixens produce a litter of four or five cubs. As solitary animals, foxes do not hunt in packs like dogs, instead opting for an omnivorous diet that can be diverse, from sand eels and beetles to rabbits and birds.

[10] *https://www.npws.ie/publications/red-lists*

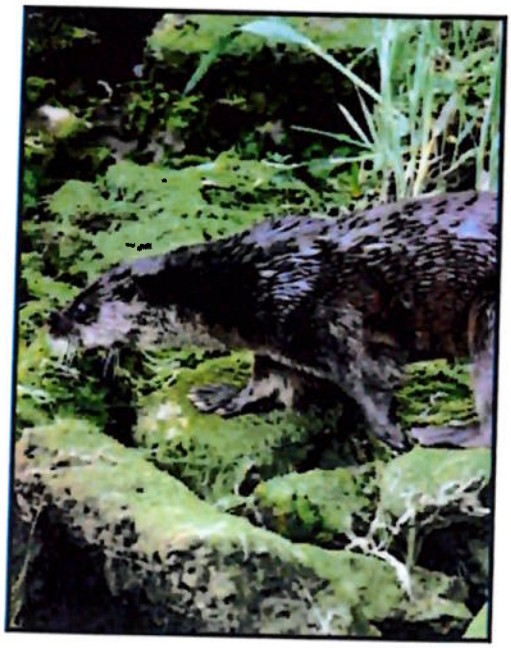
Otter

LEAST CONCERN | Highly Protected

Lura lutra

Madra Uisce/Dobharcú

Length (incl. tail) 100-130cm



Otters have the name 'madra uisce' as Gaeilge meaning 'water dog'. Though not part of the dog family, they are mustelids that place them in the same family as pine martens, stoats and badgers. Based on the most recent national survey in 2010/11, Ireland is home to an estimated 7,800 breeding female otters, remaining relatively stable over the previous thirty years. Their varied diet includes many fish species such as sticklebacks, salmon and eels, while they will opportunistically feed on frogs, small birds or crayfish. Otters reside and give birth to young in holts, holes on the riverbank usually well hidden to avoid hostility from others. On lowland rivers where fish can be abundant, otters hold small territories (1-2 km), but these can stretch up to 10 or even 15 km long in upland rivers and streams.

Irish Hare

LEAST CONCERN | Protected

Giorria Eireannach

Lepus timidus hibernicus

Length (incl. tail) 60 cm

The Irish hare (sometimes called 'Irish Mountain Hare') is an Irish subspecies of mountain hares. They are considerably larger than rabbits, and females are slightly larger than males. They are separated from the non-native brown hare by their stockier build, ears shorter than their head and pure white tail. Irish hares make forms instead of dens, shallow depressions, often in dense vegetation such as tall grass and rushes used for cover or a good vantage point. They are fond of Ling Heather and sedges and feed on various plant species. They can be found in many habitats at any elevation. While hares can breed at any time of year, peak breeding likely occurs in spring and summer.

Irish Stoat

LEAST CONCERN | Protected

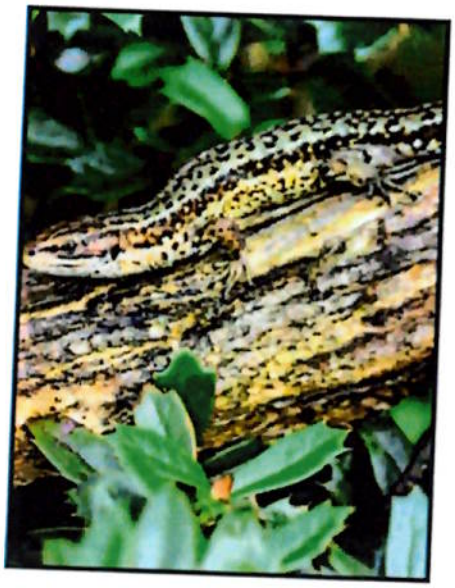
Easóg Éireannach

Mustela erminea hibernica

Length (incl. tail) 33-46cm

Stoats are often mistakenly called 'weasels' even though they don't occur in Ireland. The Irish Stoat is a subspecies only found in Ireland and the Isle of Man. They can be difficult to spot because they like to stay close to cover. It escapes predators by sprinting along walls, hedges and vegetation, often to dens where rats and rabbits formerly burrowed. They will predate inhabitants of such burrows if needs be. Stoats can be identified as small mammals with a long, low-lying body with a reddish-brown back and cream throat and belly with a black-tipped tail. Known for their courage, they will kill adult rabbits much larger than themselves to feed their kits.

Common Lizard
LEAST CONCERN | Protected
Laghairt Comónta
Zootoca vivipara
Length (incl. tail) 10 - 16 cm



The Common Lizard is Ireland's only native reptile. Slow worms were likely introduced in the 1970s, and Leatherback Sea Turtles visit Ireland's marine waters during their summer migration. Lizards vary in colour but are usually brownish- grey and often have rows of dark spots or stripes down the back and sides. Females have pale-yellow bellies, while males exhibit bright yellow undersides with spots. Lizards are often spotted basking in the sun on exposed rock, stone walls or logs during the summer. They are found in various habitats such as heathland, moorland, woodland and marshes. They are quick on their feet and scamper under rocks and logs for shelter. Common Lizards breed from March to May and are unusual in that their offspring hatch from egg membranes within seconds of birth.

Common Frog
LEAST CONCERN | Protected
Frog Comónta
Rana temporaria
Length: 6-10cm

One of our three amphibian species in Ireland, Common Frogs are the most ubiquitous. Though they are associated with water, they live primarily on land, returning to the water when it's time to breed. Frogs can be found in damp, tussocky vegetation, gardens and hedgerows. Frogs can live for 5-10 years. In winter, they hibernate where there is no frost, such as under tree stumps, rock piles or in stacks of turf, until spring. When it's time to emerge, frogs migrate to ponds where breeding can begin. It involves a degree of wrestling away rivals, and males clamp onto the female's back in an embrace known as 'amplexus', which can last for days - the result is 1 - 4,000 eggs.

Marsh Fritillary
VULNERABLE | Protected
Fritileán Réisc
Euphydryas aurinia
Wingspan: 35-50mm | Flight: May-Jul

Marsh Fritillary butterflies are brightly coloured, with a mosaic of brown, orange and cream markings that form a chequered pattern. They rely on Devil's Bit Scabious for their lifecycle. Adults lay eggs on the underside of the leaves, and the resulting caterpillars feed exclusively on this species, spinning dense webs around them in the process. Colonies can be found in damp calcareous grassland, degraded bogs, wet heath and fens up to 300m in elevation. The Marsh Fritillary population in Ireland has seen a 30+ per cent decline from 1995 to 2009 and declines in both areas of occupancy and habitat quality. In light of this, it is the only legally protected insect in the country, and its utilised habitat should be maintained to ensure continued usage.

Green Hairstreak
LEAST CONCERN
Stiallach Uaine/Glas
Callophrys rubi
Wingspan: 28-34mm | Flight: Apr-Jun

Hairstreaks exhibit a vibrant emerald green underside with a faint white streak along their wing borders and a brown upperside only seen in flight. They live in dry, scrubby habitats, including heathland and moorland, rough grassland, and woodland rides and clearings. Caterpillars feed on various species such as Common Bird's-foot trefoil, Bilberry and Gorse, depending on the habitat. Adult butterflies are most likely to be seen resting on leaves or bushes, especially Gorse, and sit with their wings closed. Males can sometimes be observed fending off other males and flying insects from their territory. The most common encounter is a flicker of green and a rapid and erratic flight.

Fox Moth (Caterpillar)
LEAST CONCERN
Leamhan Sionnaigh
Macrothylacia rubi
Length (caterpillar) 7cm | Flight: May-Jun

The Fox Moth is more likely to be noted as a caterpillar, as the adult is a large brown moth that can be easily missed or incorrectly identified. It is a large brown caterpillar that is exceptionally hairy and has an orangey stripe along the length of its body. In early development, it can have numerous orange/yellow bands. They are commonly found on paths and low vegetation, sunning themselves. Adults lay grey eggs in May and June on the stems of grasses and leaves of brambles and heathers, the larval foodplants. Once hatched from June onwards, they feed on these and willows, bilberry and meadowsweet until they overwinter in leaf litter or loose soil. After emergence in spring, the caterpillars pupate in a cocoon for a month to metamorphose into adults.

Emperor Moth
LEAST CONCERN
Leamhan Impire
Saturnia pavonia
Wingspan: 55-80mm | Flight: Apr-Jun

One of our most spectacular moths, the Emperor, is also one of our largest. Males showcase a pattern of grey, dark brown and orange or even pink markings and striking owl-like eyespot on the upper side of the wing. The underside also has eyespots on a russet-pink background. Females are much larger than males and have eyespots set on a buff, grey, white, and red pattern. The caterpillar is also striking, turning bright green with black bangs and coloured bumps when fully grown. Larval foodplants include brambles, heather, blackthorn and hawthorn. They can be found in many open scrub habitats, from bogs and heathland to field margins and woodland edges. The adult's sole purpose is to find a mate and reproduce and do not feed whatsoever in this quest before they succumb.

Plants

Heathers: All three heathers commonly found in the Comeraghs provide vital food, offer stability to friable peaty soils and create habitats essential to the life cycle of many of the species featured in this leaflet. When all stages of growth, from young shoots to aged woody plants, are present, heather plays a central role in a healthy upland habitat. Without grazing, heathland would gradually develop into woodland. The loss of heather to wildfire or severe overgrazing has disastrous effects on the many animals, birds, frogs and insects that shelter beneathitsevergreencanopy,feedonshootsorsipnectarfromitsflowers. Youmaynotice tiny holes in Bell Heather flowers, drilled by bees to extract the nectar. This nectar, when processed by honeybees, makes much sought-after heather honey.

Ling Heather

Fraoch mór

Calluna vulgaris

Ling heather is the most abundant of our heathers. It is tolerant of most soils and found almost anywhere in the mountains. Note the tiny and beautiful flower. The leaves overlap and appear to cling to the stem.

Flowers July to October; Plant up to 80 cm in height.

Cross-leaved Heath

Fraoch naoscaí

Erica tetralix

Cross-leaved Heath is named for how its blue-green leaves are arranged in fours around the stem in a cross formation. Plump bell-shaped pink flowers hang in a bunch at the top of the stem. Cross-leaved heath is found in wetter places.

Flowers May-September; Plant up to 30 cm in height.

Bell Heather

Fraoch cloigíneach

Erica cinerea

Bell heather is found on thin peat and stony soils, often with Ling. The leaves grow in threes, with tufts of shorter leaves where the longer leaves join the stem. Vivid purple bell-shaped flowers grow in groups along the plant's wiry stems.

Flowers June to October; Plant up to 50 cm in height.

Tormentil

Néalfartach

Potentilla erecta

Tormentil is an indicator of acidic soil, abundant over hill grassland, heath, and bog. Tormentil's bright-yellow flowers, with four heart-shaped petals, dot our hillsides for up to eight months each year. One flower that every hill farmer should recognise! Tormentil was used to treat a range of ailments in humans and livestock. In the 1700s, it was used to tan leather (its roots contain tannins, and there was a shortage of trees and tree bark in Ireland at that time). It still has uses in complementary medicine, including treating toothache, sore throats and diarrhoea.

Flowers May to October; Plant up to 20 cm in height.

Bog cotton

Ceannbhán

Eriophorum angustifolium (Common Cottongrass)

Eriophorum vaginatum (Hare's Tail Cottongrass)

The white heads of Bog Cotton or Cottongrass are easily recognised but look more closely, and you may see two species. Common Cottongrass has multiple white seed heads and long, smooth grass-like leaves (often tinged reddish-purple at the end). The leaves emerge (in triangular formation) from wet peat and bog pools. The leaves and roots of Common Cottongrass have chambers that conduct air down to the root tips in the oxygen-deficient peat. However, Hare's Tail Cottongrass lacks this feature; it has a single white seed-head in a dense clump of wiry leaves and will be found growing on firm peat. The minute seeds of Bog Cottons have fine white hairs for wind dispersal. Unlike genuine cotton, the hairs of Bog Cotton lack tensile strength. Up to about 100 years ago, they were mixed with wool or cotton and used to manufacture cloth, carpets, and roofing felt. It was also used to stuff pillows, make candle-wicks and as tinder to start fires.

Flowers April and May; Plant up to 30 to 50 cm in height.

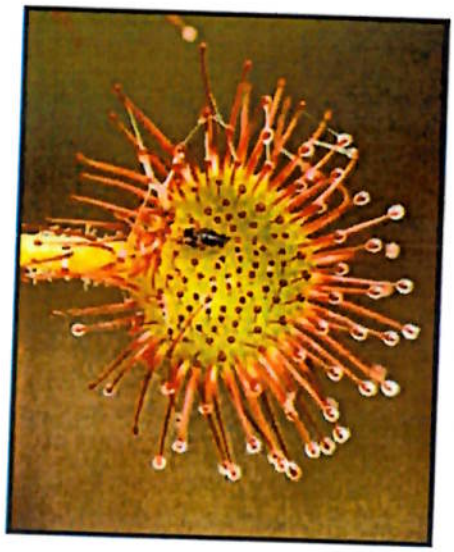
Whort / Fraughan

Fraochán

Vaccinium myrtillus

Whort or Fraghan, a deciduous dwarf shrub, grows on heaths and dry bogs. Leaves return in spring, and pink bell-shaped flowers follow soon after. In many parts of the Comeraghs, the highly nutritious berries were picked for export to Britain, especially during the two world wars. Harvesting the delicious black fruits in summer is a celebrated ancient folk ritual.

Flowers April to June; Plant up to 60 cm in height.



Round-leaved Sundew

Drúchtín móna

Drosera rotundifolia

Historically used to cure ailments from warts to whooping cough, sundew displays a pretty little white flower atop a slender stalk. Sunshine colours radiate from this tiny and beautiful plant which grows on wet bogs. The sundew lures insects to their death by catching them on long sticky hairs. The added food value from digesting insects helps the plant survive on nutrient-deficient peaty soils.

Flowers June to August: Plant up to 10 cm in height.

Lousewort

Lus an ghiolla

Pedicularis sylvatica

Watch out for this low-growing plant on damp ground and bogland. Lousewort got its name because it was believed to cause lice in sheep. There's no evidence that Lousewort causes lice, but the plant hosts a tiny snail that can transmit liver-fluke larvae to sheep, and sheep with liver fluke often have lice too! Lousewort is a semi-parasitic plant. It latches onto the roots of grasses and other plants to acquire minerals from the other plant, a valuable adaptation for a species that grows on land with a limited supply of nutrients. The leaves are often purple-tinged.

Flowers May-July: Plant up to 20 cm in height.

Heath Milkwort

Na deirfiúiríní

Polygala serpyllifolia

Heath Milkwort grows on acid, peaty soils, and blanket bogs. A low-growing plant with several stems; the flowers (usually blue, but sometimes pink, mauve or white) are said to be shaped like tiny udders. Its name, milkwort, comes from the fact that this plant was traditionally used to make an infusion that would help increase the flow of mothers' milk when ingested. This belief and the name Polygala, meaning 'much milk', come from Ancient Greece.

Flowers May to September; Plant up to 20 cm in height.

Heath Spotted Orchid

Na circíní

Dactylorhiza maculate

Ireland's most common orchid, the Heath Spotted Orchid has pink-mauve flowers and dark spots on its leaves; it occurs on heath and bogs. Orchids grow slowly, taking several years to bloom. Orchid seeds carry no food reserves, making them incredibly light for successful wind dispersal. Survival after germination depends on tapping into a soil fungus which helps the young orchids gather essential nutrients.

Flowers June to August; Plant up to 30 cm in height.

Devil's-bit Scabious

Odhrach bhallach

Succisa pratensis

Devil's-bit Scabious is the food plant for the caterpillars of the Marsh Fritillary, one of Ireland's rarest butterflies. Watch out for these violet-coloured, rounded flower-heads on tall stems in damp places, marshes, heaths and hedgerows. The flowers are an important food source for late-flying butterflies and moths. Why the name Devil's-bit Scabious? The devil cut its root short because he was angered that the plant healed many diseases (skin diseases including scabies, other wounds and running sores, bad eyes, coughs and liver disease).

Flowers June to October; Plant up to 75 cm in height.

Bog Asphodel

Sciollam na móna

A bog plant with a delicate yellow flower and upright leaves. The flower spike turns into a deep orange seed head, which lasts well into winter. The species' scientific name 'ossifragum' means 'bone breaker', referring to the old belief that sheep and cattle bones became brittle after grazing on it. Most bog vegetation is calcium deficient; without supplements, livestock can suffer mineral deficiency.

Flowers June to August; Plant up to 30 cm in height.

Fir Clubmoss

Aiteann Muire

Huperzia selago

Fir Clubmoss is named for its resemblance to a miniature fir tree. It is one of Ireland's four species of clubmoss. A characteristic mountain species which thrives above 300m. Clubmosses are amongst the oldest known plants. During the Carboniferous period (350 million years ago), clubmosses were the dominant plant life and are likely to have grown up to 30 m tall. Today's clubmosses are much smaller (5-12 cm), but their basic structure has altered little.

Gorse

Aiteann

European Gorse Ulex europaeus (70 - 200cm high)

Western Gorse Ulex gallii (in photo) (up to 80cm high)

Western Gorse (also known as Autumn Gorse) is characteristic of dry heath habitat, growing as a dense, spiky mat and flowers in the autumn. Spiky shrubs with distinctive yellow flowers provide shelter and protection for ground-nesting birds and young saplings. With bluish-green stems and thorns, the taller European Gorse flowers in spring give off a coconut smell on sunny days. Harvested in the past as winter fodder for cattle and horses and also used as domestic fuel. Gorse is highly flammable and burns at a high temperature. European Gorse is found almost everywhere. It needs deeper soils and indicates land abandonment.

Bog Moss

Súsán

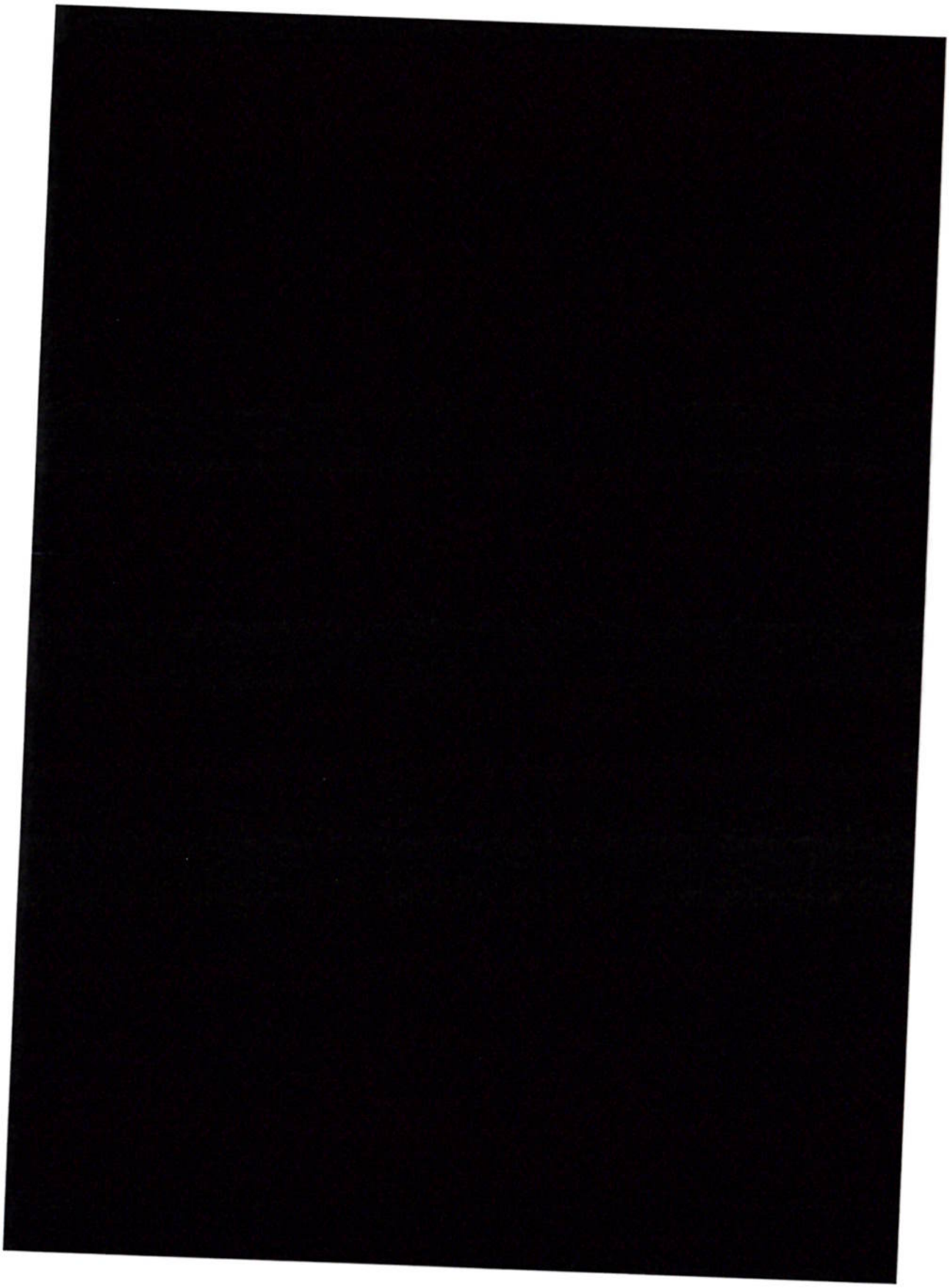
Sphagnum

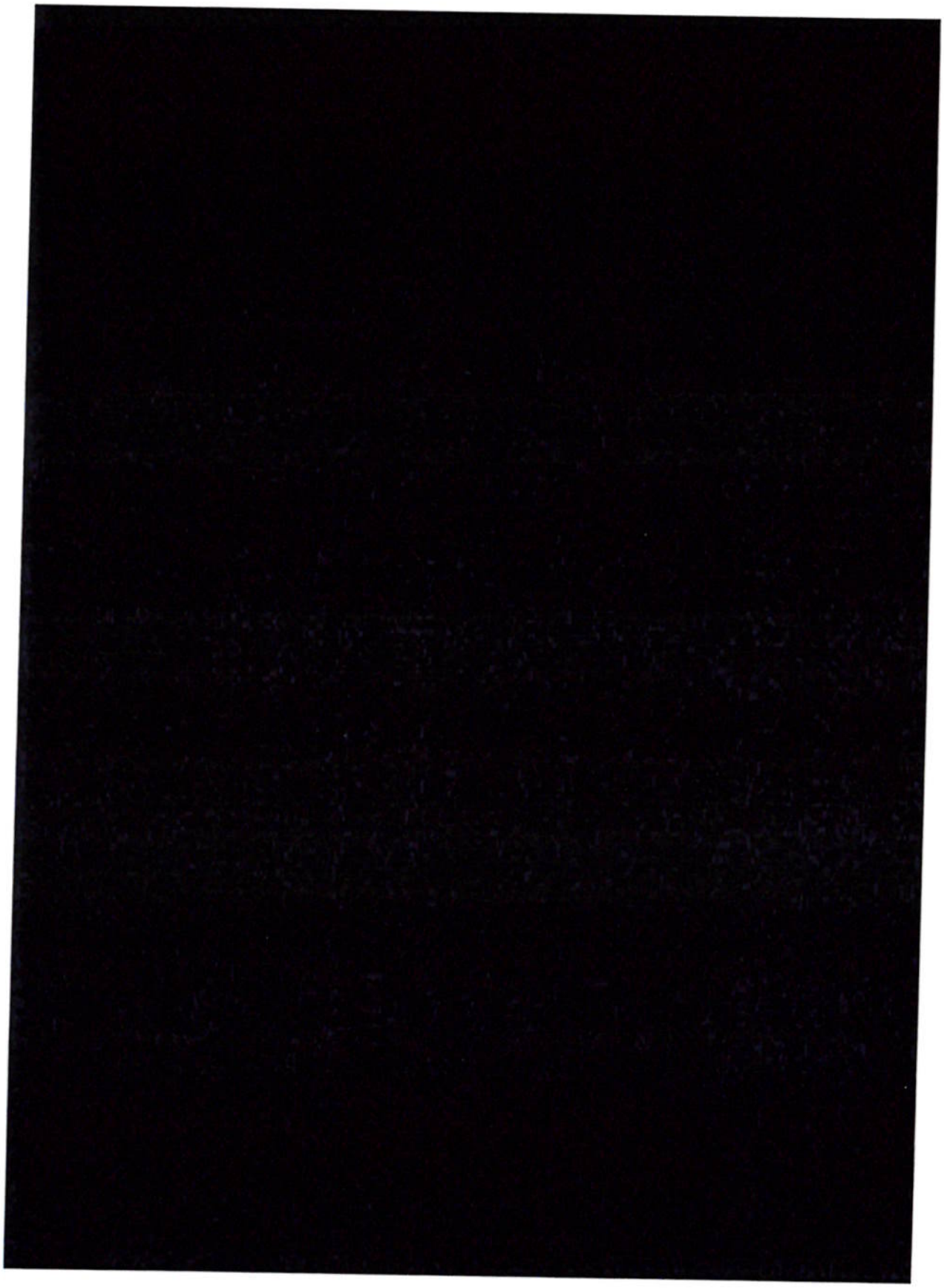
Bog mosses (Sphagnum species) have vivid green and red hues. They form spongy hummocks on wet peat and bog pools. Their acidic nature inhibits the decomposing action of bacteria and fungi, and the consequent build-up of dead plant matter forms peat at a rate of approximately 1 mm yearly. The build- up of turf helps reduce carbon dioxide in the atmosphere and helps reduce global warming. The specialised water-retaining cells of Bog moss allow it to absorb up to 20 times its weight of water by capillary action. These unique characteristics led Bog moss to be harvested, dried and exported for use as an antiseptic wound dressing during World War I.

Lichen

Rhizocarpon geographicum

The pioneering ability of lichens to establish in locations too hostile for plants (such as bare rock) results from a symbiotic partnership between a fungus and an alga. The fungus provides the structure and the alga, which can photosynthesise, produces energy for growth. Use your phone or the magnifying lens on your compass to look close-up at these diverse and bizarre organisms. With almost 1,200 lichen species in Ireland, identification can be difficult. Most of us are happy to admire their beauty! Map lichen or (Rhizocarpon geographicum) is a 'crustose' lichen. It grows flat and tight against hard acidic rocks and walls, mainly in mountain areas with low pollution levels. Map lichen gets its name from the way the dark borders between the lichen patches make them look like a relief map.





9. The Comeragh Mountain Habitats – An Introduction

The Legislative Context

The overall aim of the Habitats Directive is to maintain or restore habitats to **favourable conservation status**. European and national legislation obligates Ireland and its citizens to preserve habitats and species under favourable conservation conditions in the Natura 2000 network. The Government and its agencies are responsible for implementing and enforcing regulations that will ensure the ecological integrity of these sites.

Favourable conservation status of a habitat is achieved when:

- its natural range, and the area it covers within that range, are stable or increasing,

and

- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future,

and

- the conservation status of its typical species is favourable.

The most recent Comeragh Mountain SAC survey was completed in 2014[11]. It classified and mapped the location and extent of upland habitats. The survey used the scheme of Fossitt (2000) and Annex I of the EU Habitats Directive and assessed their condition.

Natura 2000 network or sites are home to some of the 2000 species, and 230 habitat types, deemed to be most at risk and of European importance to protect. Within this, there are two types of protected areas Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

Annex I habitats are those protected by the European Habitats Directive. The best examples of them have been designated as SAC

Fossitt habitats refers to a way or classifying or defining a habitat. It is the habitat classification used by the National Parks and Wildlife Service (NPWS) and consultants in Ireland.

The report was required to provide a basis for developing management practices for Annex 1 habitats to preserve or restore favourable conservation status.

The area of the SAC is 6,290 ha. total.

[11] *https://www.npws.ie/sites/default/files/publications/pdf/SPEU09_Comeragh_Mountains_Report_01b_M.pdf*

Annex 1 - habitats	Area (ha)	Anex 1 - habitat	Area
Dry Heath	2095	Inactive Blanket Bog	69
Active Blanket Bog	838	Siliceous Scree	44
Wet Heath	528	Siliceous rock slope	72
		Alpine boreal heath	33
		Calcareous rockly slope	
Total	3,461		222

The dominant habitats are dry heath, active blanket bog, and wet heath. Unfortunately, the 2014 survey assessed the conservation status of eight of the habitats to be unfavourably bad. It also identified the main activities affecting them were sheep grazing, burning and peat erosion.

The survey made recommendations designed to improve the condition of the habitats from unfavourably bad to favourable. These include regular monitoring to ensure the Commonage Framework plans that resulted in reduced stocking rates are resulting in some recovery of the habitats. They recommended that burning is restricted to smaller areas (less than 5 ha) and these areas are then not burnt again for 15 years.

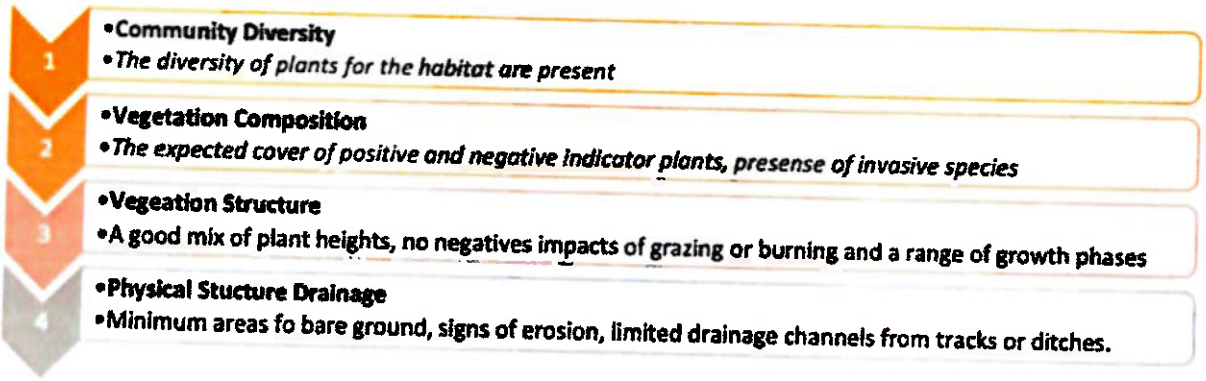
In November, the NPWS published its conservation objectives for ten Annex 1 habitats on the Comeragh Mountains SAC[12] and the ecologist's suggestions on what is required to maintain or improve them based on the survey results.

NPWS also published a supporting document for conservation objectives[13] presented under four headings.

- Community diversity
- Vegetation composition
- Vegetation structure
- Physical structure drainage

The NPWS conservation objectives for dry heath, wet heath and blanket bogs are provided in Appendix 9.1. These are built around four pillars.

[12] *https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001952.pdf*
[13] *https://www.npws.ie/sites/default/files/publications/pdf/Comeragh%20Mountains%20SAC%20(001952)%20Conservation%20objectives%20supporting%20document%20%E2%80%93%20upland%20habitats%20[Version% 201].pdf*



Activities Requiring Consent

Farmers must know some conditions associated with work on uplands listed as Natura 2000 sites. Activities requiring consent (ARCs) are specific works or activities that have the potential to damage Natura 2000 sites.

A list of 38 ARCs has been established[14]. Some relevant ones to the uplands are listed in Appendix 9.2.

ARCs are not prohibited activities, but before being carried out, consent must be granted by the Minister for Housing, Local Government and Heritage or another relevant public authority to which the consent function for that activity falls.

This prior consent requirement ensures that the Minister (or the relevant competent authority) carries out the necessary environmental assessment to determine if the activity can occur and if any conditions should be attached to any consent.

It is an offence to carry out an activity requiring consent in Natura 2000 sites without first getting approval.

How to apply for consent

A form (Appendix 9.3) must be completed and submitted to the local regional NPWS office. Experience has shown that application forms should be submitted well before the proposed activities. Farmers may get help filling out the form from their local Conservation Ranger if necessary.

A Summary of the Activities Requiring Consent for Upland Habitats (grassland, heaths and blanket bog.) See Appendix 2 for more detail.
Livestock grazing above a sustainable density (as defined in approved farm plans). 2095
Grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung.
Changing traditional use from hay meadow (to either grazing or silage making) or from grazing to silage cutting/adding lime.

[14] *https://www.npws.ie/farmers-and-landowners/activities-requiring-consent*

Supplementary feeding of stock, except as defined in REPS guidelines (Upland bogs only)
Adding lime or fertiliser of any sort to areas not previously fertilised;
Applying fertiliser which would: **• Increase the level of nitrogen in the soil.** **• Increase the level of phosphorous in the soil.**
Applying phosphorous to soils which are above the Soil P Index 2.
Using fertiliser on slopes over 25 degrees.
No burning of vegetation on upland bogs or wet heaths. If burning on dry heath - Burning areas of vegetation over 5 ha or burning any site more often than once every 15 years.
Cutting turf except for existing banks; no cutting from intact (uncut) areas; commercial peat moss or turf extraction.
Reclamation, infilling, ploughing or land drainage, reseeding, planting trees or other species, and rock removal.
Use of any pesticide or herbicide.
Dumping, burning or storing any materials.
Alteration of the banks, bed or flow of watercourses,
Operation of commercial recreation facilities (e.g., pony trekking).
Introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area.

The Comeragh Mountain context

Uplands (excluding afforested areas) may be broadly defined as the areas of unimproved lands that occur on hills and mountains above enclosed farmland. These areas have been formed by powerful geological (see the geography section) and biological processes but have also been shaped by over eight centuries of human activity.

They typically occur above 150 m in altitude and are primarily used for rough grazing. The biodiversity value of upland areas has, in some ways, remained higher

than the lowlands because their land use is generally restricted to rough grazing because of climate, soil, and topographic factors.

The Comeragh mountains and their biodiversity are vital because they provide food animals and other ecosystem services.

Ecosystem an area where plants, animals, and other organisms live together in the landscape and are influenced by weather, soils and so on.

Biodiversity is the variety of plant and animal life in a particular habitat.

The Comeragh mountain ecosystems provide us and our rural economy with benefits or services. For example, carbon storage in heathland plants and peat mitigates climate change and hydrology. The vegetation found on heathland will slow water flow and reduce flood risk. Finally, us and our rural economy with benefits or the Comeraghs provide cultural services such as cultural heritage and recreational experiences.

Cultural Heritage includes monuments, buildings and sites that have significant value for us in terms of their history, folklore, arts, music, and beauty.

However, human activities, including drainage, reclamation, agricultural improvement, peat extraction, erosion, burning, afforestation and overstocking, have resulted in the loss and degradation of the Comeragh habitats, as evidenced in the SAC survey noted above.

The objective in managing the Comeragh Mountain uplands and commonages is to increase our range of outputs beyond sheep and include biodiversity and other environmental goods and services. An understanding of the structure and functioning of the habitats is vital to achieving this objective. There is an ongoing need to focus on the management system's efficiency and cost-effectiveness continually.

Comeragh Habitats

Heath habitats have evolved from clearing the native woodlands over thousands of years to creating grazing for animals. Heaths will eventually revert to native woodland or scrub if abandoned. On the other hand, overgrazing and burning will shift the habitat towards grassland vegetation. As noted above, dry and wet heaths must be preserved if included in a SAC.

Dry heaths have at least 25% cover of heathers in relatively dry situations found on better- drained soils or steeply sloping ground. They tend to overlie mineral soils with no more than a thin layer of peat. The plant species include heather, bell heather, bilberry and some fine grasses. Cowberry, Crowberry, and Bearberry may also be present.

Wet heaths have at least 25% cover of heathers and differ from dry heath in that purple moor grass is more common. It occurs on shallow peats (less than 50 cm deep). The plant species include cross-leaved heath, purple moor grass, bog asphodel, heather, deer grass, and in very wet situations, bog myrtle may be found.

Blanket bog is sphagnum-rich vegetation on peat-forming a blanket cover. Blanket bog is an area of peat with high rainfall that allows peat to develop not only in wet hollows but over large areas of undulating ground – giving rise to its name. The depth typically varies from 0.5 to 3.0 m. Apart from sphagnum, common species include heather, cross-leaved heath, bog cotton, deer grass, bog asphodel and sundews.

Dry Humid Acid Grassland is the typical hill pasture that occurs on unimproved or semi- improved pasture. They are found on free-draining, nutrient-deficient acid soils that may be dry or humid but not waterlogged and are characterised by vegetation dominated by grasses and herbs.

This grassland mainly occurs on mineral-rich or peaty podzols in upland areas but can also be found on siliceous sandy soils in the lowlands, as in the case of the Curragh in Kildare. It is usually the most extensive near the upper limit of enclosed farmland on hills and mountains, particularly those in the centre and east of the country. It also occurs widely on steep slopes in upland and lowland regions and near the coast. Dry-humid acid grassland frequently grades into or forms mosaics with dry heath.

Poor Fen and Flush. Fens are peat-forming systems that differ from bogs in that they are fed by groundwater or moving surface waters. They occur in river valleys, poorly drained basins or hollows, and beside open stretches of water (lake margins or river floodplains). Fens may also be associated with the fringes of other parts of acid bogs where the water supply is enriched. Flushes are usually smaller features maintained by the movement of or seepage of water. They occur on slopes and may or may not be peat-forming. Some flushes feed into fens, while others may be associated with various habitats, including bogs, woodlands and grasslands. Flushed in bogs are usually characterised by changes in the vegetation that are brought about by an enhanced supply of nutrients. Fens and flushes are divided into 'rich' (basic) and 'poor' (acid) types depending on the origin and nature of the water supply.

Poor Fen and flush include peat-forming fens and flushes that are fed by groundwater or flowing surface waters that are acid. In most cases, the substratum is acid peat, which has a higher nutrient status than rain-fed bogs. Sedges and or rushes typically dominate the vegetation of poor fens and flushes. Other standard components include common cottongrass (Eriophorum angustifolium), velvet bent (Agrostis canina), purple moor-grass (Molinia caerulea), Yorkshire fog (Holcus lanatus) and broadleaved herbs such as marsh violet (Viola palustris), bogbean (Menyanthes trifoliata), heath bedstraw (Galium saxatile), tormentil (Potentialla erecta) and marsh cinquefoil (Potentilla palustris). There may be some limited cover

of dwarf shrubs. Extensive carpets of mosses including, in particular, Sphagnum, Calliergon stramineum and Polytrichum commune, are characteristic.

Improved Agricultural Grassland is intensively managed or highly modified agricultural grassland that has been reseeded and/or regularly fertilised and is now heavily grazed and/or used for silage making. It includes regularly reseeded monoculture grasslands and rye-grass leys that are planted as part of an arable rotation. Improved agricultural grassland is typically species-poor, and sward quality varies depending on soil type, fertility, drainage and management. Rye grasses (Lolium spp.) are usually abundant and may entirely dominate the sward, often associated with white clover (Trifolium repens).

Appendices.

The appendices provide summaries of the conservation objectives for the Comeraghs, wet heath, dry heath and blanket bog and a list of the Activities Requiring Consent for Comeragh Upland Farmers for the following habitats – Upland grassland, scree and inland cliff; Heaths and Blanket Bog.

Appendix 9.1

The NPWS conservation objectives for wet heath, dry heath and blanket bogs

Wet Heaths with Erica Tetralix (528 ha) were recorded in 2014 across the SAC with extensive patches along the valley of the river Mahon and on the southwesterly slopes of Barracree and Lyre mountains.

Community Diversity
Conservation objective
Maintain variety of vegetation communities, subject to natural processes.
Vegetative Composition
Conservation objective
Cross-leaved heath (Erica tetralix) present within a 20m radius of each monitoring stop.
Cover of positive indicator species at least 50%.
The total cover of Cladonia and Sphagnum species, Racomitrium lanuginosum and pleurocarpous mosses is at least 10%.
Cover of ericoid species and crowberry (Empetrum nigrum) at least 15%.
Cover of dwarf shrubs less than 75%.
The total cover of negative indicator species is less than 1%.
Cover of non-native species less than 1%.

Cover of scattered native trees and shrubs less than 20%.
Cover of bracken (Pteridium aquilinum) less than 10%.
Cover of soft rush (Juncus effusus) less than 10%.

Vegetative Structure
Conservation objective
Less than 10% of the Sphagnum cover is crushed, broken and or pulled up
Less than 33% collectively of the last complete growing season's shoots of ericoids, crowberry *(Empetrum nigrum)* and bog-myrtle *(Myrica gale)* showing signs of browsing
No signs of burning in sensitive areas, into the moss, liverwort or lichen layer or exposure of peat surface due to burning.

Physical Structure Drainage
Conservation objective
Cover of disturbed bare ground less than 10%.
Area showing signs of drainage from heavy trampling, tracking or ditches less than 10%.

Dry heaths (2,095 ha) cover 33% of the SAC. Extensive patches occur in the northwest and east and at Farbreaga in the south. Dry heath was recorded in 2014 throughout Comeragh Mountains SAC, but was less frequent to the west of Coumfea.

Community Diversity
Conservation objective
Maintain variety of vegetation communities, subject to natural processes.

Vegetative Composition
Conservation objective
The number of bryophyte or non-crustose lichen species present at each monitoring stop is at least three, excluding Campylopus and Polytrichum mosses.
At least two positive indicator species are present at each monitoring stop.
Cover of positive indicator species at least 50% for siliceous dry heath and 50- 75% for calcareous dry heath.
The proportion of dwarf shrub cover composed collectively of bog-myrtle (Myrica gale), creeping willow (Salix repens) and western gorse (Ulex gallii) is less than 50%.
The total cover of negative indicator species is less than 1%.
Cover of non-native species less than 1%.

Cover of scattered native trees and shrubs less than 20%.
Cover of bracken (Pteridium aquilinum) less than 10%.
Cover of soft rush (Juncus effusus) less than 10%.

Vegetative Composition
Conservation objective
The senescent proportion of ling (Calluna vulgaris) cover less than 50%.
Less than 33% collectively of the last complete growing season's shoots of ericoids showed signs of browsing
No signs of burning in sensitive areas.
Outside sensitive areas, all growth phases of ling (Calluna vulgaris) should occur throughout, with at least 10% of cover in the mature phase.

Physical Structure Drainage
Conservation objective
Cover of disturbed bare ground less than 10%.

Blanket bogs (907 ha comprised 838 ha of active blanket bog and 69 ha of inactive blanket bog) were recorded in 2014 across the SAC but were most abundant on the plateau of Knockaunapeebra.

Peat formation
Conservation objective
At least 99% of the total Annex I blanket bog area is active

Hydrology
Conservation objective
Natural hydrology unaffected by drains and erosion

Community Diversity
Conservation objective
Maintain variety of vegetation communities, subject to natural processes.

Vegetation Composition
Conservation objective
The number of positive indicator species at each monitoring stop is at least seven.
Cover of bryophytes or lichens, excluding Sphagnum fallax, at least 10%.
Each potential dominant species' cover is less than 75%.
Cover of non-native species less than 1%.

Vegetation Structure
Conservation objective
Less than 10% of the Sphagnum cover is crushed, broken, or pulled up.
The last complete growing season's shoots of ericoids, crowberry *(Empetrum nigrum)* and bog- myrtle *(Myrica gale)* show signs of browsing collectively less than 33%.
No signs of burning in sensitive areas, into the moss, liverwort or lichen layer or exposure of peat surface due to burning.

Physical Structure Drainage
Conservation objective
Cover of disturbed bare ground less than 10%.
Area showing signs of drainage from heavy trampling, tracking or ditches less than 10%.
Less than 5% of the greater bog mosaic comprises erosion gullies and eroded areas.

Appendix 9.2
A list of the Activities Requiring Consent for Comeragh Upland Farmers with the following habitats - Upland grassland, scree and inland cliff; Heaths and Blanket Bog.

SECTION A Please note that you must submit an ARC to the NPWS local regional office for the activities listed below, and you should not undertake the activity before consent is received.	**SECTION B** Please note that the activities listed in Section B, in most cases, require a license or consent from another statutory authority (e.g. the local planning authority, the Minister for Agriculture, Food and Marine). If this process has been completed, there is no need for an ARC. If not, you must submit an ARC.
Upland grassland, scree and inland cliff	
Livestock grazing above a sustainable density (as defined in approved farm plans).	Developing leisure facilities including golf courses, sports pitches, caravan or camping facilities.
Grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung.	Removal of soil, mud, gravel, sand or minerals. Developing roads or car parks. Construction of fences, buildings or embankments.
Changing traditional use from hay meadow (to either grazing or silage making) or from grazing to silage cutting/adding lime.	Afforestation.
Adding fertiliser of any sort to areas not previously fertilised; Applying fertiliser which would: • Increase the level of nitrogen in the soil. • Increase the level of phosphorous in the soil.	Commercial turf cutting.
Applying phosphorous to soils which are above the Soil P Index 2.	Erecting or operating a wind farm.
Using fertiliser on slopes over 25 degrees. Creation of new tracks or paths. Burning of vegetation. Reclamation, infilling, ploughing or land drainage, reseeding, planting trees or other species, and rock removal.	
Use of any pesticide or herbicide.	
Dumping, burning or storing any materials.	
Alteration of the banks, bed or flow of watercourses,	
Operation of commercial recreation facilities (e.g. pony trekking).	
Introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area.	

Heaths (Wet and Dry)	
Supplementary feeding of stock, except as defined in REPS guidelines.	As for upland grassland above, except for commercial turf cutting
Introduction of stock to formerly ungrazed areas.	
Adding lime or fertiliser of any sort.	
Creation of new tracks or paths.	
Burning areas of vegetation over 5 ha, or burning any area more often than once every 15 years.	
Reclamation, infilling, ploughing or land drainage, reseeding tree planting, or other species.	
Rock removal/cutting turf except for existing banks; no cutting from intact (uncut) areas; commercial peat moss or turf extraction.	
Use of any pesticide or herbicide, including sheep dip	
Dumping, burning or storing any materials	
Alteration of the banks, bed or flow of watercourses.	
Operation of commercial recreation facilities (e.g. pony trekking).	
Introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area.	

Blanket Bog	
Grazing of livestock above a sustainable density or type of stock (as defined in approved farm plans).	Developing leisure facilities including golf courses, sports pitches, caravan or camping facilities.
Grazing by livestock treated within the previous week with a pesticide which leaves persistent residues in the dung.	Removal of soil, mud, gravel, sand or minerals.
Supplementary feeding of stock, except as defined in REPS guidelines.	Developing roads or car parks. Construction of fences, buildings or embankments. Afforestation.
Introduction of stock to formerly ungrazed areas. Adding lime or fertiliser of any sort.	
Creation of new tracks or paths.	Erecting or operating a wind farm.

Burning of vegetation.
Reclamation, infilling, ploughing or land drainage. Reseeding, planting of trees or any other species.
Rock removal/cutting turf except from existing banks; no cutting from intact (uncut) areas.
Commercial peat moss or turf extraction.
Use of any pesticide or herbicide, including sheep dip/ dumping, burning or storing any materials.
Alteration of the banks, bed or flow of watercourses.
Operation of commercial recreation facilities (e.g. pony trekking).
Introduction (or re-introduction) into the wild of plants or animals of species not currently found in the area.
Recreational use of mechanically propelled vehicles.

Appendix 9.3
APPLICATION FOR PERMISSION TO CARRY OUT AN ACTIVITY REQUIRING CONSENT IN A SITE TO WHICH THE EUROPEAN COMMUNITIES (BIRDS AND NATURAL HABITATS) REGULATIONS 2011 (NO. 477 OF 2011) APPLY,
For Completion by Applicant

Rialtas na hÉireann Government of Ireland | Tionscadal Éireann Project Ireland 2040

1. APPLICANT'S NAME:

_____

2. APPLICANT'S ADDRESS:

_____

Nature of the operation/activity for which the permission is sought (give as full details as possible):
***Please note – you must attach a map highlighting the location of the proposed works**

FOR COMPLETION BY NPWS REGIONAL STAFF

3. SAC SITE CODE: _____

4. DESCRIBE THE HABITATS THAT WOULD BE AFFECTED BY THE ABOVE PROPOSAL: _____

_____

5. RECOMMENDATION (ALLOW/DISALLOW): _____

6. REASONS FOR RECOMMENDATION: _____

SIGNED:

_____

POSITION:

_____

AGREE/DISAGREE:
SIGNED:

_____

POSITION:

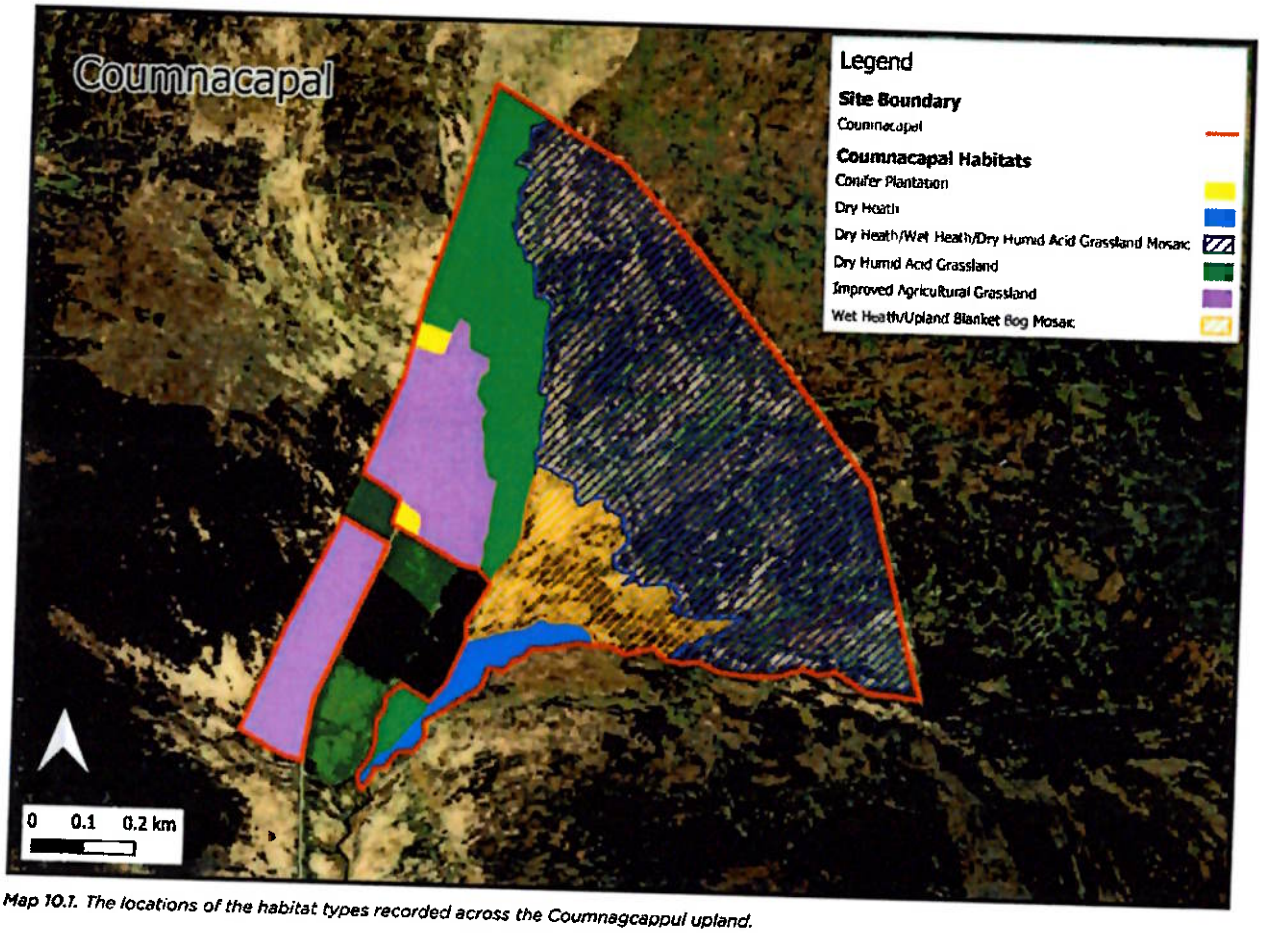
_____

10. Habitats Survey Results and Potential Actions

A field survey of the upland was undertaken in September 2021. An overall description of each habitat was recorded, including common botanical species and other habitat characteristics, *e.g., shrub height, grazing signs, signs of burning etc.*

The Comeragh Mountains SAC is approximately 650 m east of the Coumnagcappul mountain (Map 1.2).

The habitat types recorded across the mountain and their location are shown in Map 10.1. The percentage of each habitat within the upland is outlined in Table 10.1.



Map 10.1. The locations of the habitat types recorded across the Coumnagcappul upland.

Habitat	Area (ha)	Area (%)
Dry Heath/Wet Heath/Dry Humid Acid Grassland mosaic	44.67	55.8
Improved Agricultural Grassland	12.32	15.4
Dry Humid Acid Grassland	11.84	14.8
Wet Heath/Upland Blanket Bog mosaic	8.38	10.5
Dry Heath	2.35	2.9
Conifer plantation	0.53	0.6
Total	80.09	100%

Dry Heath/Wet Heath/Dry Humid Acid Grassland mosaics accounts for the most significant proportion of Coumnagcappul mountain, covering a total area of 44.67 ha, equating to just over 55% of the upland. This mosaic habitat is located on the eastern half of the mountain. It reaches from the hill's summit (and the border with Toureen) down the slope, changing to a wetter habitat of wet heath/bog mosaic on the flatter plateau area.

The overall site is a relatively complex mosaic of the three habitats with dry, humid acid grassland and dry heath in the drier sections with shallower soil and wet heath in the area that is somewhat more waterlogged on deeper peat.

Ling heather dominates the dry heath habitat, with smaller amounts of bell heather and bilberry. The understory in the dry heath is similar to the species occurring in the dry, humid acid grassland habitat. It includes bent grasses, tormentil, heath milkwort, heath bedstraw, sweet vernal grass, fescue, and branched moss species.

Grassy species, especially purple moor-grass, dominate the wet heath areas. Dwarf shrubs (cross-leaved heath, crowberry) are also present in lower abundances. Other species in the wet heath areas include deergrass, Polystichum moss, heath rush, soft rush and wood-rush *(Luzula sp.)*. Low quantities of Sphagnum are in a patchy distribution throughout the wetter areas.

The mountain is kept under a strict burning regime, whereby different sections are burnt twice a year. The complex mosaic of dry heath, wet heath and dry, humid acid grassland ensures that fires do not take hold or burn too hot across a wide area of dry heath as when they hit a break in the dry heath (i.e., the grassland or wet heath) they generally burn out. Burning has taken place very close to *(i.e., on the bank of)* the Colligan watercourse (and tributaries) that runs along the southern boundary of the mountain. It can lead to erosion of the bank and a subsequent reduction in water quality.

The management regime for the dry heath on this mountain section has created a favourable mosaic of varying heather heights ranging from 5 cm to approximately 50 cm with all stages present, from pioneer to degenerate. This mosaic of heather heights allows for a greater abundance of biodiversities, such as ground-nesting birds and invertebrates, to thrive within the habitat as different niches are available for other species.

Nonetheless, signs of heavy grazing on previously burnt, regenerating heather are evident in some places, which may lead to the infiltration of dry humid acid grassland into once dry heath areas.

Bare ground is also evident in some areas, leading to erosion and further spread of the grassland habitat at the expense of the heath habitat. Additionally, purple moor grass dominates most wetter areas. This species is indicative of disturbance *(e.g., burning)*, and it is likely creating monocultures and crowding out more favourable species.

Monitoring stops were undertaken within the dry heath section of this mosaic habitat, and there was a 0% failure rate for these stops. A few unfavourable attributes were identified, however, in a limited number of areas throughout the habitat, which included:

- Disturbed bare ground in some areas
- Burning inside sensitive areas, *i.e., near watercourses*

A couple of sections of Dry Humid Acid Grassland that are not in a mosaic with wet and dry heath are also present within Coumnagcappul mountain. One of these sections is located at the very northern tip of the mountain and reaches down the slope between the grassland and heath mosaic and the improved agricultural grassland in this area. The second section is located towards the very southern tip of the mountain adjacent to the Colligan tributary and conifer woodland area. These two habitat sections cover an area of 11.84 ha accounting for 14.8% of the upland area. Species within this habitat include sweet vernal grass, wavy hair grass, and tormentil. Some areas in the more southerly section of this grassland are wetter and more indicative of wet grassland (not mapped). Species in these wetter areas include soft rush, creeping buttercup and marsh thistle.

A Dry Heath section is also adjacent to the more southerly section of dry humid acid grassland described above. This dry heath habitat covers an area of 2.35 ha, equating to 2.9% of the upland area. This area of dry heath contains ling heather, bilberry, tormentil and sweet vernal grass. It had also been burnt in the week previous to the survey being undertaken.

The gullies of the adjacent Colligan river and tributaries create a micro-climate within which a diverse array of atypical upland species can thrive in conjunction with conventional species that occur in the uplands. These species included yellow pimpernel, marsh violet, sharp flowered rush, lesser spearwort, ribwort plantain and meadow buttercup. Bracken was also present in these gullies.

A section of upland Blanket Bog/Wet Heath mosaic is present within Coumnagcappul mountain towards the southern border. The possible main Colligan river channel borders this habitat section to the south, while a tributary rises and runs along the western boundary of the habitat. A second tributary rises within the habitat and flows between the blanket bog/wet heath habitat and adjacent dry heath towards the first tributary to meet it within the neighbouring conifer plantation.

The upland blanket bog/wet heath habitat is saturated and dominated by purple moor grass, predominantly in knee-high tussocks. Purple moor grass dominance can signify disturbance *(e.g., burning)*. It establishes and grows quickly and can crowd out other bog species, lowering the bog's diversity and reducing the habitat's overall condition. A purple moor grass bog does not work in the same way as a healthy blanket bog. It often has a reduced cover of Sphagnum mosses, and it may not reduce the risk of flooding as effectively because there is less roughness to slow the flow of water. Its capacity to lock in carbon is minimised, and a purple moor-grass covered bog carries a high risk of wildfire ignition.

Very low abundances (<5%) of dwarf shrubs such as cross-leaved heath, bilberry and ling are present, and where these species were present, grazing was evident. Sphagnum was frequent but not as abundant as would be expected. Other species observed include tormentil, bog pimpernel, devil's bit scabious, bog cotton, marsh St. John's wort, soft rush, marsh pennywort, sundew, marsh violet, bog asphodel, star sedge, sharp flowered rush, marsh willowherb and lousewort.

Monitoring stops were undertaken within this habitat, and there was a 100% failure rate for these stops. The primary reasons for these failures were:

- High percentage cover of grassy species, mainly purple moor grass
- Signs of burning inside sensitive areas – *i.e., along the river banks/gullies*
- Burning of bryophyte (moss) layer
- >10% coverage of soft rush
- Low cover of positive indicator species
- Low cover of dwarf shrubs
- Overgrazing of dwarf shrubs

Improved agricultural grassland accounts for 12.32 ha (15.4%) of Coumnagcappul upland.

A conifer plantation accounts for 0.53 ha (0.6%) of Coumnagcappul upland.

Coumnagcappul Potential actions:
The ecologist proposed some potential actions designed to improve or maintain habitat condition.

- Reduce burning frequency.
- Purple moor grass control – grazing by cattle, less frequent burning/disturbance.
- Dry heath failures, *i.e., high incidence of grazing and low species diversity, likely arising from high grazing pressure.*

11. Potential habitat actions and shareholder response

The outcomes from the farmer and ecologist discussions on the proposed potential actions to improve the habitat quality of the uplands are outlined here. Four questions were used to discuss the farmer's responses to the proposed actions. Are you happy with the results of the habitat assessment? Do you agree with the suggested actions? Will you implement it? If not, why not?

The ecologists' reports and potential actions to improve the habitats in many ways described what Tom intuitively knew about the different areas on their upland. For example, wet and dry areas and excellent and bad sheep grazing areas.

The positive outcome was primarily enabled by the introductory habitat training they received and the farmers accompanying the ecologist during the assessment process. It also reflected the extra time allocated to discuss the results and potential actions. In essence, the farmers had ownership of the process.

Tom was anxious to address the failures at the monitoring stops. He did not like the concept that they failed and wanted to discuss the potential actions to manage them.
Potential Actions

- Reduce burning frequency.
- Purple moor grass control – grazing by cattle, less frequent burning/disturbance.
- Dry heath failures, i.e., high incidence of grazing and low species diversity, likely arising from high grazing pressure.

Tom disagreed he was burning too frequently. He said he would not reduce burning frequency but be more careful where he burns. However, Tom did take on board that the level of burning can promote grassland and loss of dry heath. He is now also aware of the damage burning was causing in wet heath areas.

He said he would consider cutting or grazing the purple moor grass. However, implementing either option would create challenges for him.

He said he would stop burning on the upland bog areas and consider a bog restoration project.

Appendix 11.1. Some background Notes on Upland Management

This appendix aims to collate some of the available guidance for upland grazing management that considers habitats and meat production.

The Habitats Directive aims to maintain or restore the favourable conservation status of habitats in Special Areas of Conservation.

Achieving this and the proposed introduction of score payments for upland habitat conditions may require changes in existing upland management to restore favourable conditions and or increase the score, i.e., repair, maintain, and enhance the habitat.

For farmers, grazing management and stocking rates throughout the year are essential strategies for restoring and maintaining favourable conditions for many upland habitats. Implementation will determine both animal production output and the impact on habitat conditions. There is evidence that increased heather height/cover and other dwarf shrub species may be seen after five years if grazing pressures are changed.

In addition, controlling invasive species, prescribed burning, introducing cattle grazing, appropriate siting of supplementary feeding areas, and vehicle and recreational management are required.

Domestic livestock has grazed uplands for centuries. It has altered habitats from natural woodlands to heathlands (including dry and wet heath and upland bog) to grassland. The heathland habitats are protected under the Habitat Directive in the SAC areas on the mountain. These "new man-made habitats" have become a distinct and vital part of Comeragh's natural heritage.

Heathlands are a mosaic of different habitats determined by soil, altitude, drainage and, in some cases, previous land management. The three main habitats, dry heath, wet heath and upland bog, have further grazing limitations and management requirements. Some are more vulnerable to damage than others.

An ecologist or adviser will generally determine the condition of upland habitats and indicate the need to change current grazing management to achieve a better outcome. The ongoing management regime will require change if there is slight heather recovery, an expansion of bracken or purple moor grass or other less desirable species.

The options include additional away wintering, reduced burning, summer cattle grazing, etc., to improve the upland condition. If grazing pressures are changed, increased heather height/cover and a wider variety of dwarf shrub species may be seen after five years.

Knowledge of the habitats and their sensitivity to grazing is central to upland management plans.

Dry heath and grazing

Dry heath is found in areas of freely draining peaty soils where ling or bell heather is the dominant vegetation.

There is usually a grass component in the mosaic of vegetation. Grazing animals will graze the grass and some of the tips of the new heather shoots from late spring to late summer.

When the grass is not growing in the autumn, winter stock will browse the heather shoots more intensively and can damage the plants.

- When a heather plant is ungrazed, it produces annual shoots to create long stems and a small open bush. When grazed, it has more side shoots, and the bush becomes smaller and tighter, often interlocking with neighbouring plants to form a canopy.
- Under heavy grazing, where most of the shoots are grazed, the stem becomes contorted and twisted as the only surviving shoots are inside or below the plant.
- Under extreme grazing, plants become very tight, small topiary bushes. The stems remain at ground level, where the annual shoots appear in summer before being grazed off every winter. When this happens, the dry heat will be eventually replaced by grassland.

Grazing target for dry heath

Aim to keep dry heath in good, grazed condition with healthy plants and minimal stem contortion. Large areas of dry heath typically support stocking rates of 0.5-1.5 ewes (0.075-0.22 LU) per ha.

Higher stocking rates are supported at low altitudes where satisfactory grasses form a significant proportion of the vegetation.

In autumn and winter, stock numbers should be reduced by half.
Key points:

- Grazing at suitable densities will help maintain dry heath in good condition.
- Heather is not heavily grazed when the grass is available (unless grazing pressure is high).
- Dry heath is most vulnerable in the winter.

Wet heath and gazing

A wet heath habitat, on a wet soil or thin (less than 50 cm) wet peat, has a mix of weak heather and cross-leaved heath that exists alongside purple moor grass. The vegetation tends to be dominated by dwarf shrubs, sedges, grasses, mosses and lichens. Heather will be less frequent on wet heath than on dry heath. Bog moss will be less common on wet heath than on blanket bog.

The carrying capacity of this habitat is much lower than a dry heath, and it takes longer

to recover from grazing damage. The wet nature of the soil also makes it vulnerable to trampling, particularly in the winter.

Where stock grazes heather in winter, it can be damaged to the point where it is replaced by purple moor grass, which is of very low grazing or environmental value.

A simple way of assessing the grazing level is to look for grazed shoots of cross-leaved heath. This species is highly unpalatable and, when grazed, indicates very high grazing pressure and damage to other species.

Grazing target for wet heath

Wet heaths typically support 0.25–0.5 ewes (0.04–0.075 LU) per hectare. Reduce stocking density by at least half. Ideally, remove all stock (especially cattle) in autumn and winter to benefit dwarf shrubs such as heather and reduce the risk of trampling causing peat erosion.

Key points:

- Supports low stocking densities
- Vulnerable to grazing and trampling, particularly in the winter

Blanket bog and grazing

Large peat areas can be covered by wet or dry heath or, where the water table is high, by bog habitats with abundant cotton grasses and sphagnum mosses.

Blanket bog usually occurs on areas of flat or gently sloping deep wet peat *(e.g., greater than 50 cm)*.

The vegetation tends to be dominated by sphagnum mosses, sedges such as cotton grass, dwarf shrubs, and purple moor-grass and deer grass in certain areas. Sphagnum moss is more common and forms continual carpets of moss.

On blanket bog, **the aim is not only to keep the habitat in good condition but to protect the peat below**. Peat bogs traditionally carry very low stocking rates apart from a short period in the spring when sheep look for cotton grass shoots.

The key to good management is to ensure that grazing and trampling pressure is low enough to avoid exposing any new peat and allow some re-vegetation to occur where peat is being eroded.

The blanket bog has a low carrying capacity and is vulnerable to trampling and erosion from stock. As with wet heath, excess grazing pressure on heather (particularly during the winter) can damage it to the point where it is replaced by purple moor-grass.

What needs to be done?

Blanket bog typically supports 0.25–0.5 sheep (0.037–0.075 LU) per ha.

Reduce stocking density by at least half. Ideally, remove all stock in autumn and winter to benefit dwarf shrubs such as heather and reduce the risk of trampling peat, causing erosion.

Where bog is already heavily impacted, density may need to be below these levels to permit recovery, particularly where there is erosion.

A high-water table is essential to the formation of new peat. Blocking ditches and drains can restore the peatland function where bogs have been drained in the past.

- Key points:
- Supports low stocking densities.
- More vulnerable to trampling than grazing.

Upland grasslands and grazing

These habitats vary from grasslands dominated by the dense and rough purple moor grass and tufted hair grass to the short swards of high-altitude calcareous grasslands.

The dense, rough grasses usually dominate other species. In many cases, this habitat can benefit from heavier summer grazing, particularly cattle.

Good management should encourage stock to consume more grasses while preserving more sensitive habitats.

The short herb-rich grasslands on well-drained slopes are the most productive of upland habitats and usually carry the heaviest stocking rates. They vary from acid to calcareous types depending on the underlying geology.

Good management allows a wide diversity of flowering plants in the sward to flower and set seeds during the summer. It also maintains grazing at a level that ensures grasses do not outcompete flowers.

It is challenging as stock preferentially graze these grasslands and are always drawn to them. This habitat can suffer undergrazing if too much of the summer's growth is left ungrazed. Good management is achieved through an appropriate stocking rate or bespoke 'off-summering' arrangements.

Key points:

- Habitat requires grazing.
- More vulnerable to overgrazing in the summer.

Other specialist habitats such as tall-herb communities and montane scrub are palatable and can be attractive to all herbivores. Preventing damage may necessitate enclosure to exclude stock and deer.

Prescribed Burning

Burning or cutting heather and grass can be a helpful management tool.

Prescribed burning needs careful planning and control. If burning is too frequent, with large fires or in inappropriate locations such as on peatland, it can damage the habitat to the detriment of the agricultural and natural interests. Do not burn these areas more frequently than once every 15 years.

It is crucial to get the scale right. Too few areas create a focus for grazing on the new growth, which is detrimental. Too much, and you remove too much forage and cannot achieve a long-term rotation.

The prescribed burning code of practice should be followed. This code provides sound advice on all aspects of prescribed burning.

A draft prescribed burning plan for your upland or commonage is contained at the end of this report.

Bracken or Fern Control

Bracken (Pteridium aquilinum) is a natural part of the landscape. Its abundance appears to have fluctuated over thousands of years. Bracken's invasive nature allows it to spread, which now occurs widely in Irish upland habitats.

Initially a woodland plant, bracken may have been kept in check by shading from the woodland canopy. Over the centuries, the large-scale loss of woodland cover may have facilitated its spread and increased abundance.

Changes in land management practices have also tended to favour the spread of bracken, namely:

- fewer cattle grazing the upland and thus less trampling of bracken
- sub-optimal management of heather and grassland
- the ending of the practice of cutting bracken for bedding
- increased numbers of sheep in the uplands (although high densities may help contain bracken in grassland).

Bracken is now a severe recognised problem in some areas of Ireland. Recent attempts to control bracken have highlighted the need to manage it properly. There has been a dependency on specific control techniques that are inappropriate in every situation. Bracken has an extensive underground stem (rhizome) system which can store large amounts of nutrients and carbohydrates. It means bracken can recover after initial treatment if control is neglected. Therefore follow-up treatment and aftercare must be planned and implemented.

Your approach to treatment will depend very much on the type of vegetation you want to replace the bracken. Whatever treatments are selected, management should be considered a 5-year programme.

Control programmes should consist of

- pre-control,
- primary and follow-up treatments,
- post-control management addressing vegetation recovery.

Establishing a considerable level of control with a carefully considered, targeted programme is possible. Still, it may be challenging to eradicate bracken. Primary treatment can achieve up to 98% kill. Follow-up treatment is targeted at the remaining fronds, which will continue to appear.

Supplementary feeding

Many hill sheep flocks and some hill cattle rely on supplementary feeding. This activity can influence the habitats surrounding it, and there are many considerations when planning it. Gathering stock in one place to feed can cause localised trampling and erosion or enrichment of the vegetation.

Consideration should be given to the habitat you are feeding on – bogs and wet heaths are particularly susceptible to poaching and erosion. Avoid sitting feeders or mineral blocks in these sensitive areas.

Locate stock feeders on dry, hard ground where the soil is mineral rather than peaty and rotate feeding sites to avoid erosion. Feeding hay or silage can import seeds and nutrients, so consider the value of the habitat you are influencing.

Vehicle use

Using vehicles on existing tracks causes little or no damage to moorland habitats. You can avoid damage to habitats on moorland by using low-ground pressure vehicles and varying routes.

Soft, wet ground and areas of fragile soils are the most sensitive, where the habitat could be damaged and expose.

12. Prescribed Burning Plan

Prepared by
Tom Power
February 2022

Plan Check List	
Have we notified the Fire Service control centre (telephone 999 or 112) of my intention Yes to burn? Have I notified An Garda Síochána?	YES
Are we sure that we can contact others should an emergency arise?	YES
Are we within 1.5 km (1 mile) of a woodland or forest and have notified the owners of Yes the forest(s)?	YES
Are we within the legally permitted period for controlled burning (1st September to Yes 28th February)?	YES
Is a fire necessary and are we sure why we need to burn?	YES
Have we sufficient help and equipment on standby to control the planned fire?	YES
Are we certain that my property and my neighbour's property will be safe? Have we N/A notified my neighbours?	YES
Are we sure that we can contact others should an emergency arise?	YES
Is our fire plan thoroughly prepared?	YES

This plan should be completed in advance of the intended burning period and a copy was forwarded to the local Fire and Rescue Service.

An Garda Siochana should be notified 7 to 35 days in advance of the prescribed burning operation.

Tom Power
Burn Team Leader
Date:

1. Contacts Sheet

FIRE STATION	Waterford 051 849 982 Dungarvan / Kilmacthomas 076 110 2146 Clonmel / Carrick-on-Suir 052 613 4614 999 and ask for Fire Service
GARDA STATION	Waterford 051 305 300 Dungarvan 058 48600 Kilmacthomas 051 29112 Carrick on Suir 051 642040 Clonmel 052 6177640
NPWS RANGER	Mary Coleman 085 7484197
LEAD FARMER	Tom Power 087 254 2159
CO. COUNCIL	Waterford 0818 10 20 20 Tipperary 0818 065 000
COILLTE FORESTER	Kevin Power 087 794 7711

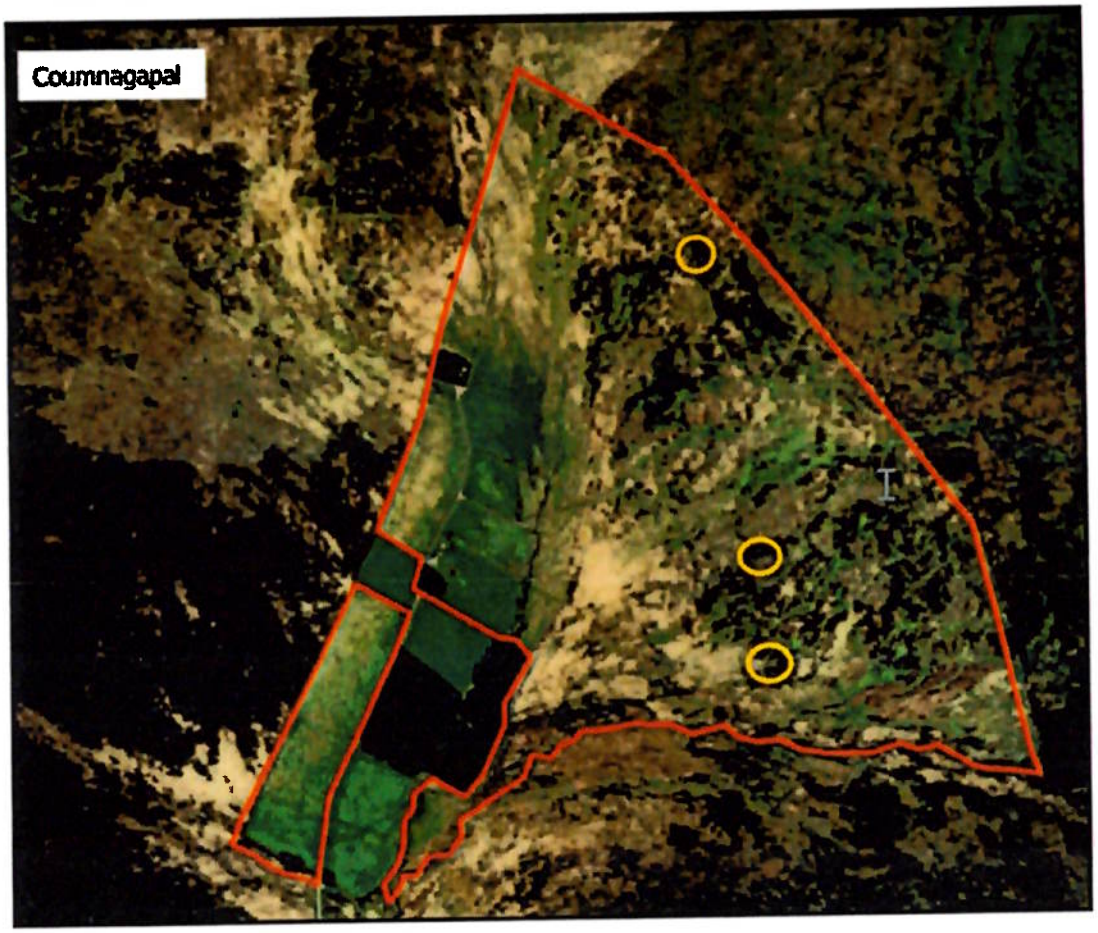
Hazard Risk Assessment Summary Sheet										
Generic Risk Assessment						Risk Assessment after application of controls				
Task	Hazzard	Risk group	Likelihood	Severity	Risk rating before controls	Control measure	Responsible person	Likelihood	Severity	Risk rating before controls
Access	Terrain. Uneven ground. Rocks.	A, B, C, D	2	4	8	Site selection. Local knowledge. A safe system of work.	Paul Fraher	1	1	1
Moving Equipment	Terrain. Uneven ground. Rocks. Injury to team	A, B, C, D	2	4	8	Apply a safe work system. Site selection. Using only essential equipment	Paul Fraher	1	2	2
Fire fighting	Exhaustion Fatigue. Arching or fire jumping. Isolation of a person.	A, B, C, D	3	4	12	Training the Team. Good planning. Small burn areas. Safe work system. Effective communication. Coordination with other services.	Paul Fraher	2	2	4
Smoke Management	Public nuisance Danger to work teams	A, B, C, D	3	3	9	Site selection Notification of neighbours	Paul Fraher	2	2	4

The prescribed burning proposed is developed jointly by upland farmers and the Comeragh Upland Communities Ecologist. The prescribed burning will follow DAFM's Prescribed Burning Code of Practice – in Ireland.

https://www.agriculture.gov.ie/media/migration/forestry/firemanagement/CofPPrescribedBurningFinal90212.pdf

3. Location details

Upland: Coumnagcappul
Location of planned burn: see map below
Purpose of prescribed burn: The prescribed burn is to control overgrown heather.
The total area of burn: 0.5 ha x 4



Map 12.1. The location of the planned burn sites

Planned Burning Date: *Insert scheduled dates here* within the legally permitted period for controlled burning. The actual date during the week will depend on the weather conditions and will consider:

The actual date during the week will depend on the weather conditions and will consider:

- Wind direction is critical as it influences the direction the fire will take - burning will not be carried out if wind speeds exceed 20 km/h. Higher speeds will result in higher flames (> 1.5m) and less control.
- Relative Humidity (RH) measures the amount of water vapour in the air. IT IS TOO DRY TO BURN when RH values are >50%.
- Similarly, temperature affects RH and will influence the fuel and burning conditions. Fire is more likely to get out of control in very dry conditions.
- Check the DAFM's Fire Danger Notices https://www.gov.ie/en/publication/01773-fire-management/#fire-danger-notices
- Also, Check Teagasc's Forest Fire Danger Rating.

https://www.teagasc.ie/crops/forestry/forest-fire-risk/

4. Personnel Requirements

Burn Team Leader: Tom Power
Phone: 087 254 2159
First Aider Name: ?????
Number of other personnel: ?

Surname	First Name	Phone
Burn Team		
Power	**Tom**	**087 254 2159**
Fire Control Team		

5. Equipment

The Burn Team will be equipped with the following Personal Protection Equipment:

- Fire retardant gloves, overalls or jackets and trousers. They will also have visors.
- The Fire Control Team will be equipped with visors and beaters.
- Fully stocked first aid kits will be available on-site.
- Adequate clean drinking water must also be made available during the burn.

6 Neighbouring Landowner Details

The prescribed burning will be conducted on the Coumnagcappul upland. The Burn Team Leader will contact neighbours in the locality to inform them of the prescribed burning operation and smoke emissions

Neighbouring Landowner 1

Contact Details:

Neighbouring Landowner 2

Contact Details:

Neighbouring Landowner 3

Contact Details:

Neighbouring Landowner 4

Contact Details: