

FRACKING & FISHING



As local knowledge about the potential impacts of fracking grows, fishermen in Co Fermanagh & beyond are becoming increasingly concerned that fracking poses a serious risk to the future of fishing in the County.

Lough Melvin is recognized as a rare and delicate eco-system and has been designated as an ASSI and also a SAC & requiring special protection

- a game fishery with a no stocking policy
- one of the few remaining wild brown trout and salmon fisheries in Europe & home to a healthy migratory run of wild Atlantic Salmon
- the only Lough in Northern Ireland to have a population of Arctic Char
- home to three distinct species of trout – Sonaghan, Gilaroo and Ferox
- **Sonaghan** is genetically unique to Lough Melvin and has inhabited these waters for over a million years. Research has shown that the DNA imprint of the Sonaghan matches no other fish in the brown trout family anywhere in the world.

Lough MacNean is classed as a coarse fishery with excellent stocks of Bream, Perch, Rudd Roach Hybrids and Pike.

- Catches in excess of 20lbs recorded from Lough MacNea
- It holds a stock of quality brown trout that run its two main rivers to spawn and reproduce ie the Blackwater and the Glenfarne rivers.

Lough Erne – the Erne system consists of Upper and Lower Lough Erne and has a world class reputation for coarse and game angling.

- Lower Lough Erne is a large expanse of water, over 25 miles long
- Lower Lough Erne is famous for the Mayfly fishing
- Upper Lough Erne is one of finest pike fishing lakes in Europe & links to the Shannon system, the largest river system in the British Isles.

Potential risks to fishing from fracking

- A network of 20 small Loughs and 150 streams/ivers extend over a radius of 25km from the Lough Melvin & Lough MacNea catchment areas. Six km uphill from Lough Melvin is the centre of the frack zone.
- This network of waterways is the lifeline for fish stocks –eg Salmon run these rivers to spawn & reproduce with the young fry residing in the rivers for two to three years.
- Millions of gallons of water are required to frack a single well; where will the water come from to frack 1440 wells and where will it end up?
- Flowback fluid from fracked wells will contain toxically high levels of salt and other chemicals. If this fluid leaks into the surrounding streams & rivers there will be large scale, long-term contamination.
- If spawning streams & rivers are contaminated, fish stocks and aquatic life will be killed The diminished fish stocks and risk to indigenous species may be so severe that our lakes and rivers may never recover

Fishing and the local economy

- Anglers come to Fermanagh from all over the world to enjoy a unique fishing experience in clean waters and a tranquil rural setting.
- There are 4 major competitions held annually –The Classic Fishing Festival, The World Pairs Fishing Festival and The Pike Classic and The Lough Melvin Open Trout Angling Championship. Annually these events attract 1000 anglers from across Europe to Fermanagh.
- Local clubs host a further 8-10 fishing competitions each year which bring significant benefits to rural areas
- Almost 3000 angling licenses are sold in Co Fermanagh annually – 85% of the total NI - sales generating direct revenue in excess of £178,000.
- In 2005, the angling industry alone was identified as underpinning 778 full-time jobs in Fermanagh

Opposition to fracking has been expressed by Fermanagh District Council, Fermanagh Lakeland Tourism & by local Angling groups

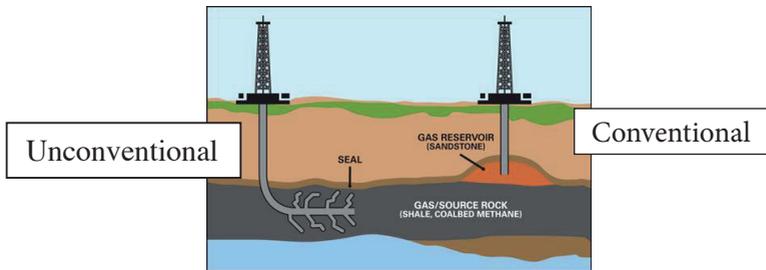
Fracking poses a real threat to unique and indigenous fish species & to the future of fishing in the County

If we are concerned about fracking in Fermanagh, we all need to speak out now and make sure our voices are heard. It may not be easy, but it will be a lot harder to live with the consequences if we do nothing.

FFAN is a cross community network of local people concerned about the risks of shale gas extraction and committed to raising awareness among the local community - For further information see www.frackaware.com, or, e-mail info@frackaware.com

Last updated May 2013

WHAT IS FRACKING?



What do the industry's words and phrases really mean?

'Conventional' gas or oil is held between layers of rock and can be extracted quite easily by drilling a normal well.

'Unconventional' gas or oil is trapped tight in small holes and cracks inside certain rocks, so it can't be extracted by ordinary drilling. To get at the gas or oil the drilling companies have to shatter the rock.

Shale is a sedimentary rock which contains this 'unconventional' gas (methane). In Fermanagh the shale layer is quite close to the surface, at around 500 – 1200 metres underground. In other countries, shale containing gas tends to be much deeper, e.g. in the USA it is usually between 2500 and 4000 metres below the surface.

Traditional fracking is a technique used since the 1940s to flush out conventional gas and oil, typically using around 80,000 gallons of water per 'frack'. It was used in Fermanagh in the 1980s and in 2001 on a few test wells.

High volume hydraulic fracturing (HVHF) is a new technique for extracting 'unconventional' oil and gas. It was first used in the early 2000s but has only been commonly used in the USA since 2005. Unlike traditional fracking, it uses immense quantities of water (around a million gallons per 'frack') and very high pressure. This is the technique proposed for extracting shale gas in Fermanagh.

Slickwater or **fracking fluid** is the mixture of water, sand and chemicals pumped at high pressure down well bores (pipes) to shatter the rock beneath. Some of the methane inside the rock will escape into these pipes and up to the surface.

Horizontal drilling is used with HVHF to allow operators to frack large underground areas.

Multi-well pads allow the operators to drill several wells on a single site, with horizontal bores extending in all directions. The plan for Fermanagh is to have at least sixty of these sites, each with twenty-four wells.

Flowback fluid is the liquid left after the fracking process – a mixture of fracking fluid, high concentrations of salt and other substances such as heavy metals and benzene. Some of this will stay underground and some will return to the surface.



Remember: Fracking in Fermanagh will be HVHF, using high volumes of fracking fluid at high pressure, drilling horizontally from multi-well pads, shattering the shale rock layer relatively near the surface, and producing large quantities of toxic flowback fluid.

Can they really frack without using chemicals?

When most of us talk about fracking, we mean the whole process of shale gas extraction, from start to finish. This includes preparation, drilling, pumping the fluid, shattering the rock, extracting the gas, processing and transporting it and maintaining the site and equipment. But when the industry talks about fracking, it only means the pumping, shattering & extraction stage. So, when operators say, for example, that they will not use chemicals, they are not talking about the whole process.

Is fracking & extraction possible without chemicals? There is little, if any, evidence to support the reality of chemical-free fracking. Even if it is possible, there is still a huge risk of soil, water and air contamination. Deep underground is a cocktail of toxic chemicals, harmless to us if undisturbed. HVHF will bring these to the surface in the millions of gallons of flowback fluid. The rest of the flowback fluid will lie underground, between two aquifers which provide the sources for Fermanagh's and Donegal's fresh drinking water. This fluid will contain high volumes of salt, heavy metals and benzene, all tragically toxic to humans and animals.

How will fracking be regulated?

The basic UK law which governs gas and oil licensing dates from the 1960s and has not kept pace with advances in scientific understanding and technology. Even the most recent environmental laws do not specifically cover HVHF, which has moved so quickly in the last ten years and is still largely experimental.

HVHF (FRACKING) POSES SERIOUS RISKS TO:

Human health, animal health, water, air quality, soil quality, farming, fishing & tourism.

If we are concerned about fracking in Fermanagh, we all need to speak out now and make sure our voices are heard. It may not be easy, but it will be a lot harder to live with the consequences if we do nothing.

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FRACKING & HEALTH

Our Health is Our Wealth



Serious Public Health concerns are beginning to be raised following recent medical research and reports into shale gas extraction (fracking).

The plan for Fermanagh: Up to 60 multi-well pads with up to 24 wells per pad. Each pad would be 6.5 acres in size and located approximately 1 mile apart. 40,000 acres of development, and may extend to up to three times this size

Experience from around the world has shown that fracking brings with it a very real risk of contamination of soil, water and air borne contamination. The full extent of future potential health problems caused by contamination from fracked wells is still unknown.

A 2012 study from America's Cornell University, 'Impacts of Gas Drilling on Human and Animal Health', described fracking as "**an uncontrolled health experiment on an enormous scale**". Many diseases caused by contamination have a lag time of up to twenty years before people become ill. By then it is too late, you cannot reverse the effects of contamination on people's health.

Even if the Company manages to do "chemical free" fracking, the flowback fluid [that which comes back up] will be contaminated by oil and gas derivatives and heavy metals washed out from the fractured shale rock. This means that millions of gallons of toxic fluid will come back up each well. This flowback fluid will contain varying amounts of the following chemicals with the associated health risks:-

- **Benzene:** *Leukemia, cancers & neural tube defects [Spina Bifida]*
- **Mercury:** *Brain & kidney damage and affects unborn child*
- **Arsenic:** *Cancer*
- **Ethyl-benzene:** *Respiratory disease, fatigue and headaches*
- **Toluene:** *Birth defects and central nervous system damage*

- **Volatile Organic Compounds:** *Endocrine disruptors; these block our chemical messengers in the body causing lung, gut and reproductive disease*

Recent medical reports & research into fracking state:-

- 25% of the chemicals used could cause cancer and mutations; 37% could upset the endocrine system; 40-50% could affect the nervous, immune and cardiovascular systems; and 90% could affect the skin, eyes and respiratory system. (Briefing note – Hydraulic Fracturing, Impacts on the Environment and Human Health - Chartered Institute of Environmental Health - 2012).
- Silicosis lung damage from the airborne silica dust used in the frack sand. [Esswein, 2012]
- Increased risk of ill health [cancer & non-cancer] in people living near frack pads. [Air pollution control division, 2008. Colorado Department of Public Health]
- Irreversible lung damage caused by ground level ozone. This is produced when fugitive methane (leaking gas) combines with the diesel fumes of fracking machinery. (In Fermanagh this 'smog' along with the other air pollution from fracking will be blown over the rest of the County by the prevailing westerly wind). [The Endocrine Disruption Index (TEDX) 2012]
- Sudden death, slow death, reproductive problems and nerve diseases have been shown in twenty four different fracking incidents involving hundreds of farm animals over six states in USA; mostly related to exposure to the flow back fluid. Some of these animals are believed to have ended up in the human food chain. [Bamberger & Oswald, 2012. Veterinary Medical Centre, Cornell University, New York]

Noise pollution from both Lorries on the roads and heavy site machinery will be a major problem in a rural County like Fermanagh, where frack pads are likely to be close to houses. The noise together with lights on around frack sites all night, will be a hindrance to sleep and can impact on both physical and mental health and well-being.

Short term industrialisation of rural areas results in:-

- A 'boom & bust' economy that impacts negatively on public health.
- Social and community upheaval creating inequality and resulting in increased mental health problems, domestic violence, crime, drug/alcohol abuse etc

The Precautionary Principle must apply. Our health is our real wealth

Full health impact assessments are required, not just environmental impact assessments.

We need to learn from the past mistakes.

Eg:- Lead in paint and petrol, asbestosis, tobacco - all caused serious illness in humans but Governments were slow to legislate against wealthy and powerful industries.

BE FRACK AWARE – LOOK BEHIND THE HEADLINES

For further information visit www.frackaware.com or access our research website on www.frackaware.info, e-mail us at info@frackaware.com and/or come along to a public information meeting

Last updated October 2012

FRACKING AND YOUR LAND



Could my land be fracked without my knowledge or permission?

Almost certainly, yes. The horizontal drill shafts can extend 1,500 meters from the well and the fractures can reach a further 600 metres. So if there is a well within that distance of your land, it's likely that fracking will happen underneath you.

Would I be paid for this?

Probably not, unless the centre of the well itself is on or within a quarter of a mile of your land. Most oil and gas rights in Northern Ireland are owned by DETI and any royalties would go to the UK Treasury. Even if you're entitled to a share of the royalties, this is dependent upon actual gas extracted and saved through that particular well, so there's no guarantee that you would receive anything.

Can I be forced to have a well or access roads built on my land?

Yes, under the Mineral Development Act, DETI has compulsory purchase and access rights (Mining Facilities Orders) and it can pass the benefit of these on to the gas companies.

Would I be compensated for disturbance, subsidence, damage or the decreased value of my land?

Not automatically, no, other than any standard payment under a Mining Facilities Order. Apart from that, you would have to go to court, at great trouble and expense, to sue the gas companies. The legal position is unclear, but you would probably only succeed if you could show actual negligence and physical damage.

And if the company went bust or was wound up?

You would be unlikely to receive anything, and could be left with the responsibility and expense of decontaminating your land.





Would I be insured against any of these risks?

It depends upon your exact situation, policy and insurance company. You would be wise to check very carefully. Standard agricultural policies do not cover fracking activities on your own land.

But hasn't fracking been going on in the States for ages with no problems?

Not exactly. This type of high volume horizontal fracking has only been used for the past decade or so, and has caused severe problems for local landowners. The gas companies have been exempt from much environmental legislation (of the kind that farmers have to abide by) and so there has been little monitoring of their activities. When a problem such as contaminated water arises, residents have very often been forced to sign gagging clauses, so they cannot go public about their experiences.

But it would be better here, wouldn't it?

Not necessarily. We have no specific laws about fracking, so are dependent on regulations drawn up for very different operations, administered by bodies which are unfamiliar with the technology, often with a lack of resources and a poor history of enforcement. Fermanagh also has a very different landscape from most of America, with our complex network of loughs, rivers and streams, our rich habitats and unique geological heritage. If Fermanagh's landscape was to be transplanted to the United States, say many Americans, there is no way that they would frack here.

What can I do if I'm concerned about this?

Contact your political representatives, especially MLAs and ministers, and let them know that this issue matters to you. Talk to your neighbours, family and friends and encourage them to look behind the cheerful headlines. See the FFAN leaflet 'Concerned About Fracking?'

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