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WildFish Response to Veterinary Medicines Directorate Consultation: "Call for Evidence on veterinary medicines containing fipronil or imidacloprid"

WildFish is an environmental charity dedicated to fighting for wild fish and their habitats.

Summary

Pesticides are one of the key pressures affecting fish and river habitats. The use of veterinary medicines in intensive farming, aquaculture, and in domestic pet care, is of particular concern.

The continued use of fipronil and imidacloprid in veterinary medicines is no longer environmentally justifiable. Both substances have already been subject to major agricultural restrictions because of clear scientific evidence demonstrating serious harm to aquatic invertebrates, pollinators and wider ecosystems. It is, therefore, illogical and inconsistent for these same chemicals to continue to be routinely applied to millions of companion animals despite evidence that their use represents a direct and ongoing pathway into the environment.

Scientific studies have identified multiple routes by which these substances enter rivers, soils, and urban waterways, including washing of treated animals, household dust, wastewater discharge, and runoff from contaminated surfaces. These compounds are highly persistent and biologically active at extremely low concentrations, meaning even diffuse domestic use can contribute to chronic environmental contamination and ecological damage.

The argument that veterinary use should be treated differently from agricultural use is increasingly untenable. Once a hazardous substance has been shown to cause unacceptable environmental harm, and once a credible pathway of contamination has been established, regulatory consistency demands equivalent scrutiny and precaution regardless of the source of release. Environmental

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protection cannot credibly apply one standard to agriculture while exempting veterinary products containing the same ecotoxic chemicals.

We therefore call for the withdrawal and prohibition of veterinary medicines containing fipronil and imidacloprid.

We believe the focus for this consultation is too narrow. Reform is needed to improve the regulation of veterinary medicines to reduce their environmental impact. Our report[1] states that there are significant gaps in monitoring, assessment of impacts on ecosystems, a real lack of use data with poorly regulated and weak authorisation or products and no or little attempt to prevent environmental harm.

Evidence

For the purpose of this consultation, we concentrate on the use of the two main pet products, fipronil and imidacloprid.

They represent a significant risk to aquatic ecosystems – not least because of their ubiquity- 63% of use in the "companion animal" market used against fleas and ticks[2]. According to the VMD, there are 148 authorised vet med products containing fipronil and/or imidacloprid (see below), either alone or in combination with other actives[3].

This makes them a key contributor to pesticide pollution in the UK.

Imidacloprid

[1] https://wildfish.org/wp-content/uploads/2026/02/26.02.26_Vet-Meds-Report.pdf
[2] Wells, C., Collins, C.M.T. A rapid evidence assessment of the potential risk to the environment presented by active ingredients in the UK's most commonly sold companion animal parasiticides. *Environ Sci Pollut Res* **29**
[3] Response to FOI request to VMD by WildFish April to June 2025

By weight, imidacloprid is one of the best-selling veterinary parasiticides in the UK.

Immediately before the ban on crop use, a combined total of over 4000kg was used for agriculture and sold for veterinary use in a single year in the UK.

After the chemical was fully banned for all outdoor use in 2018, this dropped markedly, but over 2500 kg was still being sold in the following year, all of which was destined for the domestic pet market as a parasiticide.

This represents a vast number of non-agricultural doses in circulation, given the estimated 25 million cats and dogs across the UK. Altogether, it is unsurprising that concerns have been raised regarding parasiticides as a potential source of seemingly 'hidden' water pollution in the UK[4].

Fipronil

Fipronil has been found in 99% and imidacloprid in 66% of river samples[5]. It has been suggested that small animal pets may contribute to this contamination through several routes, such as dogs swimming in rivers or owners washing their hands after application of topical treatments.

Samples taken from English waterways between 2016 and 2018 showed detectable fipronil in 98.6% of the 3861 samples tested. The mean concentration of fipronil was over 5 times the chronic toxicity limit, while the mean concentration of the persistent metabolite, fipronil sulfone, was over 38 times the chronic toxicity limit, indicating a high environmental risk to aquatic ecosystems. In this study, the highest levels were detected downstream of

[4] Preston-Allen et al., 'Are Urban Areas Hotspots for Pollution from Pet Parasiticides'.
[5] Rosemary Perkins, Martin Whitehead, Wayne Civil, Dave Goulson (2021) Potential role of veterinary flea products in widespread pesticide contamination of English rivers,
Science of The Total Environment, Volume 755, Part 1, 2021.

wastewater treatment works, suggesting washing of treated pets and pet bedding may well be a source of contamination, in addition to direct entry into waterways through swimming[6].

Imidacloprid, and fipronil are both used as vet meds for the treatment of ectoparasites in cat and dogs[7]. Yet the use of fipronil as a plant protection product was banned for all but limited use in greenhouses.[8]

Fipronil has also been banned for use as a biocide[9], with some phasing out as a result of a European-wide withdrawal of the active substance fipronil under the European Biocidal Products Regulation (Reg. EU 528/2012).

Fipronil is still used as a prophylactic (preventative) treatment for fleas by many dog and cat owners in the UK and is advertised for such regular and routine use by suppliers.

Pollution in England

The overall pollution levels in English rivers indicate that fipronil, imidacloprid and toxic breakdown products pose a high risk to aquatic ecosystems.

In 2025, the Environment Agency reported that concentrations of fipronil in water samples had not changed much over recent years, but that the frequency of

[6] Rosemary Perkins, 'Are Pet Parasite Products Harming the Environment More than We Think?', *The Veterinary Record* 187, no. 5 (2020): 197–197.
[7] Anthe, M. et al (2020) Development of an aquatic exposure assessment model for Imidacloprid in sewage treatment plant discharges arising from use of veterinary medicinal products. *Environmental Sciences Europe*, 32, no. 147 (2020). https://doi.org/10.1186/s12302-020-00424-4
Perkins, R., Whitehead, M. and Goulson, G. (2021) Dead in the water: comment on "Development of an aquatic exposure assessment model for imidacloprid in sewage treatment plant discharges arising from use of veterinary medicinal products". *Environmental Sciences Europe*, 33, no. 88 (2021) https://doi.org/10.1186/s12302-021-00533-8
[8] Implementing regulation - 781/2013 - EN - EUR-Lex
[9] Biocides are governed by a separate legal framework (both in the EU and the UK). Biocides are used to protect people and animals, preserve goods, stop pests like insects or rodents and control viruses, bacteria and fungi. Common examples are disinfectants, wood preservatives and insect repellents.

its detection as part of routine sampling had declined slightly from 99.9% of all samples in 2014 to 89% in 2024. However, the Agency is reported as stating that fipronil was still being found very frequently and at concentrations above the predicted no effect concentration - "*it's incredible how toxic these substances are"* (referring to fipronil) and "*nothing comes close to fipronil*"[10].

UK Water Industry Research (UKWIR) has shown that, for fipronil and imidacloprid, Predicted No Effect Concentrations (PNEC) values are regularly breached in UK watercourses, including downstream of sewage treatment works, with researchers concluding that *"although these substances are no longer licenced for use in agriculture they can be found in products for household use as pet flea treatments. The observed PNEC exceedances suggest further consideration should be given to policies around the use of these substances".*[11]

Pathways & Impacts

The products are understood to enter the aquatic environment through, inter alia, discharges of wastewater from domestic sewerage systems and surface water drains, as well as direct contamination from treated animals (both livestock and pets) entering water.

There is generally poor monitoring on such products in the aquatic environment, which means, based on the limited information available, it is highly likely that there are unmonitored environmental impacts from their residues in aquatic systems.

It is uncontested that there is a serious issue with active ingredients in fipronil and imidacloprid, particularly in relation to the decline in invertebrate

[10] Vet Record 29 March – 12 April 2025 page 251
[11] UKWIR (2023) The National Chemical Investigations Programme 2020 to 2022 Volume 5 Monitoring of substances of emerging concern. Report ref No 22/EQ/01/26

populations in the wild. It is unsurprising, given their designed toxicity to the nervous systems of insects and other invertebrate parasites of livestock and pets, that many vet meds still remain so heavily used.

Urgent attention is therefore needed to the impact of vet meds in rivers and lakes in the UK, on invertebrate populations and on the general ecology of water bodies.

SmartRivers – our citizen science, community-based project, which monitors invertebrate life in waterbodies in England, Wales and Scotland, has seen the effects of pesticide use, which results in the decline in various species.

Impacts are not limited to invertebrates with fish reported as bioaccumulating active ingredients, including those used in vet meds in English rivers[12]. Additionally, impacts on invertebrate populations disrupt sensitive food chains and reduce viable habitats for wild fish. Not only does it cause immeasurable harm to insect life, but it is also reported to bioaccumulate in fish and can be toxic to gallinaceous birds[13].

It is highly toxic to bees and its agricultural use is thought to have been responsible for the reduction in honeybees in the 1990s[14]. So the evidence for its impact is not new and given its proven impact, it is no surprise that many are concerned at the scope of the damage done to the aquatic environment.

[12] Calum I. Ramage, Raquel Alfama Lopes dos Santos, Lisa Yon, Matthew F. Johnson, Christopher H. Vane (2025) Widespread pesticide pollution in two English river catchments of contrasting land-use: from sediments to fish Environmental Pollution, Volume 375, 2025, 126371, ISSN 0269-7491, https://doi.org/10.1016/j.envpol.2025.126371

[13] Colin CD Tingle et al., 'Fipronil: Environmental Fate, Ecotoxicology, and Human Health Concerns', *Reviews of Environmental Contamination and Toxicology: Continuation of Residue Reviews*, 2003, 1–66.

[14] Philippa J. Holder et al., 'Fipronil Pesticide as a Suspect in Historical Mass Mortalities of Honey Bees', *Proceedings of the National Academy of Sciences* 115, no. 51 (2018): 13033–38.

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The half-life of fipronil in the environment is variable, but it degrades into compounds which are more toxic than the parent compound[15].

In 2013, the European Food Safety Agency (EFSA) assessed the risks to bees from fipronil use as a plant protection product (the use in agriculture as an insecticide).[16]

The way forwards

In November 2023, WildFish, along with many other eNGOs, called for a ban on the continued use in vet meds for cats and dogs of active substances already banned or not otherwise permitted for use on agricultural crops (as plant protection products), and that active substances deemed to be too harmful to be used on agricultural crops should be automatically banned from appearing within vet meds[17].

As of June 2025, the widespread, routine prophylactic use of fipronil and imidacloprid containing vet meds continues, the VMD seemingly relying only on warning leaflets supplied with products as its chosen method of reducing the risk to the aquatic environment. It is an open question as to the extent to which warning leaflets are read and acted upon by users. The evidence of pollution suggests that this measure is absolutely hopeless.

WildFish believes that a total ban on the use of these products is the best solution.

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[15] Haseler, Callum & Shrubb, Julia & Davies, Hannah & Rendle, David & Rathbone, Polly & Mair, Tim. (2023). Environmental impacts of equine parasiticide treatment. 10.22541/au.169157165.54920675/v1.

[16] Peer review of the pesticide risk assessment for bees for the active substance fipronil | EFSA

[17] WildFish et al. *Preventing pesticides in veterinary medicines for dogs and cats from damaging the environment.* Open letter to UK Govt. November 2023 Pesticides_veterinary_medicines_openletter_FINAL_2023.pdf

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However, as set out in our report, there are measures that can be taken now to rein back on their use by consumers. The requirement for a prescription for their use could help to reduce the incidence of severe ecological impacts. Otherwise, consumers will continue to use the products without proper regulatory control, leading to further serious pollution and long-term bioaccumulation.

This would ensure vets provide advice on risk-based, targeted use of fipronil and imidacloprid. This should result in reduced unnecessary blanket use and reduced costs to pet owners. Vets would advise on appropriate product choice and administration, reducing the risks of treatment failures in the case of infestations (with subsequent need for further treatments and expense).

Response to Consultation questions

The questions provided are rarely focused on the important issues. Nevertheless, we address some of them below:

Would you like your response to be confidential? No

In order for us to consider the evidence, may we contact you for more information, if necessary? Yes,

Who are you responding as? Conservation group / NGO–

Which of the following best describes the role or field you belong to?

NGO / Conservation group

Full name or organisation: WildFish Conservation

Email address justin@wildfish.org

Please select where you/your organisation is based

WildFish operates in England, Wales and Scotland

Your use of flea and tick treatments – N/A

Evidence relating to environmental contamination

Do you hold any published or non-public evidence relating to the effects of residues from veterinary medicines containing fipronil or imidacloprid on insects that live in water or other non-target species?

Yes – see above and the WildFish report found here 26.02.26_Vet-Meds-Report.pdf

Do you agree with a change in distribution category to restrict supply routes for these medicines? • Strongly agree

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