April 4, 2025

EPA Docket Center
WJC West Building, Room 3334
1301 Constitution Avenue, NW
Washington, DC 20004
Also submitted via Regulations.gov

Re: Pesticide Registration Review: Atrazine (Doc. ID EPA-HQ-OPP-2013-0266-2134)

Please accept the following supplemental comments submitted by the Center for Biological Diversity in response to the EPA's Proposed Revisions to the Atrazine Interim Registration Review Decision Memorandum. These supplemental comments consist of this supplemental comment letter, an associated excel file entitled "parcel details and point calculations," and 948 pdf files that document characteristics of each parcel.[1]

These supplemental comments represent a granular, field-level assessment of corn/soy fields that are highly vulnerable to pesticide runoff and review the implications of EPA's most recent atrazine runoff mitigation plan on those same individual fields. This document will discuss the data background, assumptions, methods, and results of the analysis followed by an overview of the uploaded data.

This analysis has identified 948 parcels of corn/soy fields in three Illinois counties, the Lake Springfield watershed, and near 14 Illinois drinking water lakes to be highly vulnerable to runoff. These parcels were identified as the most vulnerable fields to runoff in the assessed regions in Illinois due to noted erosion, existing channel runoff, culverts/spillways that bypass filter strips, and proximity to waterways. These fields likely serve as major pathways for the loss of a significant amount of surface-source pesticides, sediment, and fertilizer. Yet despite EPA claiming that its proposed runoff mitigation plan is targeted to reduce atrazine levels in the most vulnerable watersheds, this analysis finds that essentially none of these runoff-vulnerable fields in vulnerable Illinois watersheds would have to institute any runoff mitigation whatsoever – and nearly all could remove existing mitigations and still remain compliant. Therefore, we conclude that 1) fields vulnerable to runoff are common in impacted watersheds in the assessed area in Illinois, and 2) EPA's proposed runoff mitigation plan would have little to no impact on CE-LOC exceedances in these Illinois regions.

[1] All PDFs of individual parcels were submitted separately to EPA via overnight mail in a USB flash drive to the address at the top of these supplemental comments.

Summary

This analysis assessed certain regions in Illinois for corn/soy fields that are highly vulnerable to atrazine runoff based on the proximity of cropped area to surface water runoff sites. The analyzed area included three entire counties in Illinois, the watershed of a drinking water supply lake in Illinois called Lake Springfield, and adjacent land along the border of every drinking water lake in Illinois.

In this relatively small footprint, we found 948 parcels growing corn or soybean (a common rotational partner with corn) that either have a cropped area within 66 ft of rivers/streams or are cropped within 200 ft of lakes/reservoirs. These are the currently required no-spray buffers for atrazine from surface water and we used these buffer values as a measure of proximity to surface water that would likely make these fields particularly vulnerable to atrazine runoff if the herbicide were used on these fields. Additionally, many of these fields contained other characteristics that make them even more vulnerable to runoff, such as noted erosion adjacent to the field, existing channel runoff within the field, and/or culverts/spillways that bypass filter strips.

Of these 948 parcels, 820 had 1428 points where field runoff enters rivers or streams (either via eroded land or culverts/spillways that bypass filter strips) at sites where there is less than 66 ft between cropped area and surface water. The remaining 128 parcels are cropped within 200 ft of a surface drinking water lake shoreline. Given the proximity to water and readily identified runoff channels, these parcels are potentially responsible for a significant portion of the surface losses of pesticides, sediment, and nutrients into water sources.

On these 948 parcels that are highly vulnerable to pesticide runoff, a field-by-field GIS analysis was conducted that scored these fields under the framework of the most recent runoff mitigation proposal. Though each county in the assessment contained both Bin 1 and Bin 2 watersheds (requiring 3 or 6 runoff mitigation points, respectively), this assessment conservatively assumed that 6 runoff points would be required in every assessed area.

The mitigation practice analysis was limited to only those practices that could be confirmed via GIS techniques (10 of 27 mitigation options), or those practices for which the burden of proof was so low that any farmer could reasonably claim the point under audit, namely the “erosion specialist” and “mitigation tracking” points. After scoring each field, 99.9% of the 948 parcels (all but 1 parcel) were found to be eligible for at least 6 points without requiring any changes in pesticide use or crop production.

Not only are 99.9% of these runoff-vulnerable fields immediately eligible for 6 runoff points, but nearly 99.6% have the flexibility to actually lose points and still attain the needed 6 points. 98%

of these runoff-vulnerable fields can attain 9 or more points just based on current crop production and pesticide use practices. In practice this means that 98% of these runoff-vulnerable parcels could remove a runoff mitigation, like remove a 30-60 ft filter strip or begin irrigating their crop, and *still* be compliant with EPA's proposed runoff mitigation point system.

Associated Files

PDF Reports

Each PDF represents a parcel (or group of parcels if adjacent and with the same owner/address information) with a corn/soy cropped area within 66 ft of where surface waters enter streams/ditches or if a cropped area is within 200 ft of a drinking water lake. Runoff channels, sites where the cropped area is <66 ft from the nexus where runoff enters streams or rivers, and/or the distances from cropped area to lakes are indicated in each file in red. The files are named with the following format: County/Lake#ID, and can be matched to the excel spreadsheet using the file name.[2]

Excel Summary

Parcel location data are summarized by tab, corresponding to the report number. Also included are the number of points cropped within 66' of where surface waters enter streams/ditches per parcel, if applicable. This spreadsheet also includes the scoring of each field under EPA's proposed runoff mitigation plan, which uses the mitigation menu to assign points to different mitigation techniques.

Project Methods & Background

The current atrazine label states:

1) Product must not be applied within 66 feet of points where field surface water runoff enters perennial or intermittent streams and rivers or;
2) [Product must not be applied] within 200 feet of natural or impounded lakes and reservoirs

[2] The pdf files are organized into folders that include Champaign, McLean, and Piatt Counties, as well as Lake Springfield Watershed and Illinois drinking water lakes, all found in the state of Illinois. In a surfeit of caution due to privacy concerns, the Center has redacted information related to each parcel, such as property owner name and address, tax assessment information, public land survey location data, and deed numbers obtained from publicly available information on county tax websites. The Center can provide this information to EPA directly upon request.

These restrictions were put in place on all atrazine products following the 2004 Memorandum of Agreement between the EPA and atrazine registrants.[3] We used these buffer values as a measure of proximity to surface water that would likely make fields particularly vulnerable to atrazine runoff if the herbicide were used on these fields.

GIS data was sourced from county parcel viewer websites. These websites contain public, high resolution aerial imagery layers captured following harvest, which allow for a clear view of the soil and any evidence of residue movement or soil erosion channels that indicate flow paths. These GIS sites also contain built-in measurement tools used to confirm distances between crops and surface water. By following streams and cycling different map layers, main pathways of water flow can be identified. Streams were only considered relevant if there was visible water in multiple imagery years and they appeared to be too deep to be crossed by farm equipment, as evidenced by equipment track patterns or the presence of bridges.

In the images, culverts show as an erosion path that ends in a hole, usually in proximity to a stream/ditch. Farm equipment often use vegetative filter strips as transport lanes. Tire tracks around culvert inlets are common confirmations of a culvert, as is the presence of an outlet into the stream. Bank erosion shows as visible rivulets cutting through the field edge and cutting into the streambank. The presence of streambank spillways or riprap are common confirmations of these points.

One assumption we are making in the analysis is that most corn fields we have identified are being treated with atrazine. This assumption is based on the following:

a) EPA and Illinois extension services place atrazine usage on Illinois corn at 70-90%+.[4] Usage has likely increased since last estimate due to atrazine's synergistic effect when combined with Group 27 HPPD herbicides to combat herbicide resistance, particularly in *Amaranthus* species.

---

[3] EPA. Memorandum of Agreement Between the U. S. Environmental Protection Agency and Agan Chemical Manufacturing, Dow AgroSciences, Drexel Chemical, Oxon Italia S.P.A., and Syngenta Crop Protection Concerning the Registration of Pesticide Products Containing Atrazine. November 9, 2004. Available here: https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/related_PC-080803_9-Nov-04.pdf. Also see current label for Acuron here: https://www3.epa.gov/pesticides/chem_search/ppls/000100-01466-20211110.pdf; and current label for AAtrex nine-o here: https://www3.epa.gov/pesticides/chem_search/ppls/000100-00585-20211110.pdf.

[4] Weed Science Society of America. Draft Endangered Species Act Biological Evaluations: Atrazine, Simazine, and Propazine Registration Review. See intra letter written by Aaron Hager in the Department of Crop Sciences University of Illinois. Available here: https://wssa.net/wp-content/uploads/WSSA-comments-on-Triazine-BEs_Final.pdf; EPA. Atrazine (080803) National and State Summary Use and Usage Matrix. October 21, 2020. Available here: https://www.regulations.gov/document/EPA-HQ-OPP-2020-0514-0003.

b) Given existing data and a likely increasing trend of atrazine reliance, it is likely that the vast majority of identified corn fields are using atrazine. Identified soy fields are almost certainly rotated with corn, which would mean that any year corn was grown on that land, there is a high likelihood that it will be treated with atrazine.

Fields Vulnerable to Runoff

The GIS assessment was performed on three full Illinois counties: Champaign, McLean, and Piatt, and the watershed of Lake Springfield (a drinking water supply lake) to identify parcels that grew corn/soy within 66 ft of points where field runoff enters streams and rivers. A separate analysis analyzed fields farmed within 200 ft of 14 different drinking water supply lakes in Illinois.

Since field cropping boundaries are not always clear, fields that met our parameters were grouped and organized by parcel data. For example, if a stretch of stream had 2 sites where runoff was being introduced within the buffer distances, those may fall into the same parcel. If so, that parcel and its data were noted, then relevant GIS imagery was gathered and combined into a single parcel summary file. Alternatively, if the 2 sites where runoff was being introduced within the buffer distances were each on different parcels, then there would be two parcel summary files generated. Given the piecemeal nature of parcels, if the same owner name/address existed on multiple parcels where runoff was being introduced within the buffer distances, the resulting summary file would include all relevant adjacent parcels with the evidence of all the runoff locations between them.

County Assessment Results

County wide assessments were carried out on three Illinois counties: Champaign, McLean, and Piatt. These counties were selected for their high proportion of agricultural land use, GIS data availability, and primarily corn/soy rotation.

A) <u>Champaign County</u>
   a) Number of parcels with high runoff vulnerability: 296
   b) Number of sites where the cropped area is <66 ft from the nexus where runoff enters streams or rivers: 499
B) <u>McLean County</u>
   a) Number of parcels with high runoff vulnerability: 238
   b) Number of sites where the cropped area is <66 ft from the nexus where runoff enters streams or rivers: 334

C) Piatt County
    a) Number of parcels with high runoff vulnerability: 201
    b) Number of sites where the cropped area is <66 ft from the nexus where runoff enters streams or rivers: 343

Watershed Level Results

Lake Springfield is a drinking water lake that services a population of around 150,000 in Springfield, IL and surrounding communities. It has a history of atrazine level problems. Notably, while Champaign, McLean and Piatt Counties more often have runoff being diverted through a culvert, the rolling topography of the Lake Springfield watershed has far more instances of runoff eroding directly into streams. There are 85 parcels with high runoff vulnerability in the Lake Springfield watershed, which contain 252 specific sites where runoff enters into streams <66 ft from the cropped area. While the Lake Springfield watershed is primarily in corn/soy row crop production, there are no fields farmed within 200' of the lake itself.

Drinking Water Lakes

In addition to identifying corn/soy fields where the cropped area is <66 ft from the nexus where runoff enters streams or rivers, all drinking water supply lakes in Illinois were assessed for the presence of corn/soy fields <200 ft from the lake border. There are 128 instances of fields with a cropped area <200 ft from a lake border. These fields range from having relatively small areas with < 200 ft buffer to having several miles of a lake border < 200 ft from cropped area. Fourteen drinking water supply lakes in Illinois have at least 1 field with cropped area falling within this 200' zone.

Impact of EPA's Most Recent Mitigation Table

Fields identified as highly vulnerable to runoff based on the proximity of cropped area to surface water were assessed under EPA's currently proposed atrazine runoff mitigation plan. Not all of the runoff menu practices were assessed for each field, only those that could a) be confirmed through GIS resources or b) practices that would require little to no effort on the part of the pesticide user. The following are runoff mitigation menu practices that were considered in this analysis:

County based points - These were assigned based on EPA's provided county-based mitigation point spreadsheet.
Field slope points (slope <3%) - These were awarded based on a field-by-field soil type assessment. If a field had >51% of soil types with a <3% slope assignment (for example, MUS: 152A - Drummer, silty clay loam, 0 to 2 percent slopes) points were assigned to that parcel.
Vegetated Ditch - Given the EPA description and reference pictures, points were assigned if the field had a stream/ditch that either bisected or bordered the field. In keeping with the Minnesota guidance on perennial vs. intermittent streams[5], ditches were only counted if they could reasonably be expected to have water present year-round. Regular, shallow roadside ditches were not counted.
Buffer/Filter Strip - Buffers/Filter Strips were measured via GIS tools and assigned points. Buffers on the border of two point-tiers were given the lower point score of the two options to be conservative. For example, given that 30' width is the dividing point between 1 and 2 points, a 28' buffer & a 32' buffer would both be scored as 1 point to account for measurement error.
Grassed Waterways - This is a complicated category based on the EPA definition of the practice. Fields may slope in several directions. Other times a field may have a waterway that does not actually connect to an outlet. In other cases, a field may have multiple waterways along channelized flow paths but may be missing waterways in other flow paths. Given these challenges, fields were assigned points based on the presence of a waterway of nearly any form.
Riparian Strip - If the buffer was wooded, points were assigned in this category. If a portion of the distance from field to water was both wooded and grassed, points were split according to the component widths of each.
Runoff/Erosion Specialist - Little/no guardrails are listed for this "free" point. The EPA guidance lists Certified Crop Advisors (CCA) as one of the many providers to fill this role. All ag retail facilities that sell triazine products will have a CCA on staff. Since no measurable actions are tied to this point, it would be easy for every atrazine applicator to rightly claim they are "working with an erosion specialist," so all fields were given this point.
Mitigation Tracking - Similar to working with a runoff/erosion specialist, all atrazine users were given this point due to the low bar with its implementation. Since the point threshold is easy to meet, a farmer in a county with 2 county based mitigation points would need no more "tracking" than to write down their county based points (2), show a map of a field with a vegetated ditch (1) and 20' buffer (1), say they work with a CCA (1), and then receive a final point for "tracking" (1) all these factors. Given the low bar, all producers were given this point.
Irrigation - The current runoff mitigation menu awards 3 points for not irrigating/not having the ability to irrigate. For any fields without a visible irrigation pivot, 3 points were awarded.
Multiple Point Categories (1 point) - Parcels were eligible for an additional point if they utilized both an in-field and field-adjacent mitigation practice. If a grower was not using

[5] Minnesota Department of Agriculture. Atrazine Application Setback Requirements. Available here: https://www.mda.state.mn.us/atrazine-app-setback-reqs.

irrigation (in-field) and had at least one field-adjacent practice, they were given an additional point.

Points NOT included, but likely:

Subsurface drainage (1 point) - Much of the assessed region has one of the highest subsurface drainage rates in the Midwest AND importantly, since many of the parcels were first selected as runoff-vulnerable fields due to distance to surface water, the majority have an associated stream/ditch. Since one factor of tile drainage is access to an outlet, it's safe to assume that, in a region of high subsurface drainage rates, these selected parcels have an even higher proportion of subsurface drainage. Despite this, no fields were assigned a subsurface drainage point.
Application Rate (1-3 points) - Points were not assigned for any application rate reductions, though producers will likely get points for their current practices given common herbicide use practices. For example, pre-mix products likely have a significant amount of market share, especially in the commercial application space. These products also commonly have less than full rates of atrazine. When used at full rates, Acuron, Lexar EZ, and Lumax EZ contain 0.75, 1.5, and 0.76lbs of atrazine/acre, respectively. These products bill themselves as "1 pass products" or offer the option for an early and later season, ½ rate, 2-pass system. If a pesticide user is using these products, they would be eligible for 3, 1, and 3 points, respectively. It's likely that this captures a significant amount of atrazine users. However, without information on application rate per field, we did not assign points based on lower application rate. Notably, even though many users may be using less than full rates of atrazine, IL has the highest proportion of CE-LOC exceedances than any other state (a full 88% of IL watersheds have CE-LOC exceedances). Therefore, application rate reductions have not had a significant impact on dangerous atrazine contamination in IL.

Comparing Fields Vulnerable to Runoff with Proposed Runoff Mitigations

Each of the 948 parcels identified as highly vulnerable to runoff were scored according to EPA's proposed runoff mitigation plan. Each watershed in the counties involved required either 3 or 6 runoff mitigation points to comply with the proposed runoff mitigations. To be conservative, we assumed that all fields required 6 points to be compliant with the proposed mitigation plan. Of the 948 parcels identified as highly vulnerable to runoff (<66 ft and <200 ft between cropped area and rivers and lakes, respectively), only 1 would fail to achieve the necessary 6 points under current practice. Again, this assumes every field is in a watershed requiring the full 6 points, and this analysis only assessed 10 of the 27 possible mitigation categories in EPA's mitigation menu. So even given the highly conservative nature of this analysis, 947 out of these 948 runoff-vulnerable parcels (>99.9%) would require no additional necessary mitigation to reduce runoff under EPA's proposed mitigation plan.

Most importantly, these are the most vulnerable fields to runoff in the assessed regions in Illinois due to noted erosion, existing channel runoff, culverts/spillways that bypass filter strips, and proximity to waterways. These fields likely serve as major pathways for the loss of a significant amount of surface-source pesticides, sediment, and fertilizer. Yet despite EPA claiming that its proposed runoff mitigation plan is targeted to reduce atrazine levels in the most vulnerable watersheds, this analysis finds that essentially none of these vulnerable fields would have to institute any runoff mitigation whatsoever and nearly all could remove existing mitigations and still remain compliant. Therefore, we conclude that 1) fields vulnerable to runoff are common in the assessed area in Illinois, and 2) EPA's proposed runoff mitigation plan would have little to no impact on CE-LOC exceedances in these Illinois regions.