CENTER for BIOLOGICAL DIVERSITY Because life is good.

protecting and restoring natural ecosystems and imperiled species through science, education, policy, and environmental law

November 10, 2011

Via regulations.gov

Environmental Protection Agency
Office of Pesticide Programs
Mail Code: 7502P
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Attention: Docket ID No. EPA-HQ-OPP-2011-0586

RE: Comments in response to the Save the Frogs! petition requesting a ban on the use and production of the pesticide Atrazine; Docket ID EPA-HQ-OPP-2011-0586

To Whom It May Concern:

These comments are submitted on behalf of the Center for Biological Diversity ("Center") in response to the Environmental Protection Agency's ("EPA") request for comments on the petition requesting a ban on the use and production of atrazine, noticed September 14, 2011. We appreciate this opportunity to comment in support of a ban on use and production of atrazine.

The Center is a non-profit, public interest corporation with over 42,000 members and offices in San Francisco, California and elsewhere in the United States. The Center and its members are dedicated to protecting diverse native species and habitats through science, policy, education, and environmental law. Recognizing that pesticides are one of the foremost threats to the earth's environment, biodiversity, and public health, CBD works to prevent and reduce the use of harmful pesticides and to promote sound conservation strategies.

I. Introduction

Pesticide use poses major threats to imperiled wildlife and human health. Despite the recorded dangers associated with pesticides, its use has continued to increase in both pounds applied and numbers of registered active ingredients. The EPA has registered more than

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18,000 pesticides for use and more than 2 billion pounds of pesticides are sold annually in the United States. Pesticides are pervasive in fish and wildlife habitat throughout the country and threaten the survival and recovery of hundreds of federally listed species.

Atrazine is the most commonly used herbicide in the United States. It is applied to corn, sugar, sorghum, yams, rice, Christmas trees and lawn care. It is also the most common contaminant of ground, surface and drinking water. When sprayed during application, the herbicide is carried potentially hundreds of miles from the application site and will continue to pollute post application. As described below, numerous studies provide overwhelming evidence linking atrazine to significant human and wildlife health concerns. Its danger to humans and wildlife is so serious that it was banned in the European Union in 2004, which includes the chemical producer's home country of Switzerland.

The Center urges EPA to place an immediate federal ban on the use and production of atrazine. Although the atrazine registration review process is scheduled to begin in 2013, the risk to wildlife and the environment is too great to delay. The mission of EPA to protect human health and the environment cannot be achieved so long as atrazine continues to contaminate our land and water.

II. Atrazine has serious negative effects on amphibians and fish

The impacts on amphibians and fish due to atrazine contamination of a waterway are significant. Since amphibians respire through their skin and spend much of their lifecycle moving through the interface of water and air, they are at a high risk from chemical pollutants such as atrazine. Due to their recognized sensitivity to contaminants, amphibians are a barometer of environmental health; adverse impacts to amphibians are often the first sign that an ecosystem is under stress.

A. Amphibians

Atrazine has been found to disrupt sexual development of frogs at concentrations 30 times lower than levels allowed by EPA.[1] One study conducted by Tyrone Hayes exposed frogs to low levels of atrazine, levels which can often be found in the environment. The results showed that these low levels of atrazine demasculinized male frogs, preventing male characteristics from fully forming – Hayes found hermaphroditism in frogs at exposure levels as low as 0.1 ppb, far below the level established by EPA as safe for aquatic organisms. Hayes noted that amphibians are at great risk because the highest atrazine levels coincide with the breeding season for amphibians. Additionally, the low-dose endocrine-disrupting effects are of great concern because the described effects are all internal and may go unnoticed by researchers.

1 Hayes, T.B., et al. 2002. Hermaphroditic, demasculinized frogs after exposure to the herbicide atrazine at low ecologically relevant doses. *Proceedings of the National Academy of Sciences*, 99(8):5476-5480; Hayes, T.B., Paola Case, Sarah Chui, Duc Chung, Cathryn Haeffele, Kelly Haston, Melissa Lee, Vien Phoung Mai, Youssra Marjuoa, John Parker, and Mable Tsui. 2006. Pesticide Mixtures, Endocrine Disruption, and Amphibian Declines: Are We Underestimating the Impact? *Environmental Health Perspectives* 114(S-1):40-50

Thus, "exposed populations could decline or go extinct without any recognition of the developmental effects on individuals."[2]

Another study examined the relationship between frog diseases and pesticides and similarly demonstrates how atrazine may harm species indirectly.[3] The researchers showed "that the widely used herbicide, atrazine, was the best predictor (out of more than 240 plausible candidates) of the abundance of larval trematodes (parasitic flatworms) in the declining northern leopard frog *Rana pipiens*. . . . Analysis of field data supported a causal mechanism whereby both agrochemicals increase exposure and susceptibility to larval trematodes by augmenting snail intermediate hosts and suppressing amphibian immunity."

Also, there is the potential for atrazine to act synergistically with other pesticides—increasing toxic effects. Atrazine was found to decrease embryo survival and increase time to hatching in combination with other environmental stressors to amphibians.[4] Rohr et al. (2004) suggests that high atrazine levels may lead to increased larval energy expenditures and that resource limitations and drying conditions, coupled with environmentally realistic concentrations of atrazine, can contribute to amphibian declines.

B. Fish

Numerous studies on mammals and fish in relation to atrazine, including reports by the U.S. Fish and Wildlife Service, have reported "intersex features" within fish populations.[5] Other studies have found olfactory effects in salmon.[6]

One study by the USGS found that atrazine affects fish reproduction.[7] Fish were exposed to 0-50 micrograms per liter of atrazine – exposure levels less than the EPA Aquatic Life Benchmark of 65 micrograms per liter for chronic exposure of fish. The study shows that the normal reproductive cycling of fathead minnows was disrupted by atrazine. It also showed that

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2 Hayes, T.B., et al. 2002; Hayes, T.B., et al. 2006

3 Rohr, Jason R., Anna M. Schotthoefer, Thomas R. Raffel, Hunter J. Carrick, Neal Halstead, Jason T. Hoverman, Catherine M. Johnson, Lucinda B. Johnson, Camilla Lieske, Marvin D. Piwoni, Patrick K. Schoff, and Val R. Beasley. 2008. Agrochemicals increase trematode infections in a declining amphibian species. *Nature* 455:1235-1240

4 Rohr, J. R., A. A. Elskus, B. S. Shepherd, P. H. Crowley, T. M. McCarthy, J. H. Niedzwiecki, T. Sager, A. Sih, and B. D. Palmer. 2004. Multiple stressors and salamanders: effects of an herbicide, food limitation, and hydroperiod. *Ecological Applications* 14(4):1028-1040

5 Marjorie A. Nelson (U.S. Fish and Wildlife Service) letter to Arthur-Jean B. Williams (U.S. EPA), "RE: Informal Consultation on the Effects of Atrazine Re-registration on the Endangered Alabama Sturgeon and Endangered Dwarf Wedgemussel," February 11, 2008. FWS/AES/DCHRS/032435.; Tammy E. Stoker et al., "The effect of atrazine on puberty in male Wistar rats: An evaluation in the protocol for the assessment of pubertal development and thyroid function," *Toxicological Sciences* 58(1) (2000): 50-59; A. Friedmann, "Atrazine inhibition of testosterone production in rat males following peripubertal exposure," *Reproductive Toxicology* 16(3) (2002): 275-25; A. Moore and C. Waring, "Mechanistic effects of a triazine pesticide on reproductive endocrine function in mature male Atlantic salmon (Salmo salar L.) Parr," *Pesticide Biochemistry and Physiology* 62 (1998): 41-50.

6 Center for Biological Diversity, *Poisoning Our Imperiled Wildlife: San Francisco Bay Area Endangered Species at Risk from Pesticides*, (February 2006) at 10.

7 Tillitt, D.E., D.M. Papoulias, J.J. Whyte, and C.A. Richter, 2010. Atrazine reduces reproduction in fathead minnow (*Pimephales promelas*), article in press.

fish did not spawn as much or as well when exposed to atrazine and that total egg production was lower in all atrazine-exposed fish. There were also abnormalities in the reproductive tissues of both males and females. The study further pointed out that atrazine concentrations are greatest in streams in spring, which is when most fish in North America are attempting to reproduce.

Endocrine disruptors have been linked to asexual development of salmonids as well.[8] Investigating the sex reversal in salmonids, Nagler (2001) postulated that the 84% of phenotypic females which tested positive for the male genetic marker may be attributed to endocrine disrupting compounds. Sex ratio disruption was likewise documented in a study of male water fleas.[9] The results are of particular concern because insects are at the bottom of the food chain, serving as a food source for many higher life forms including fish. Consequently, this study has implications for wildlife throughout the food web.

III. Atrazine has serious negative human health effects

Human exposure to atrazine carries high risks for human health. Not only is it present in our land and water supply, but when sprayed during application, atrazine is carried potentially hundreds of miles from its point of application. Furthermore, Pesticide drift does not end when applications are complete.[10] Post-application drift also may occur over many days and even weeks after a pesticide application. Millions of people are involuntarily exposed to this dangerous herbicide. EPA must recognize the serious human health impacts associated with atrazine and protect American citizens accordingly with a complete ban on use.

A. Atrazine disrupts human hormones

Atrazine is a known endocrine disruptor. It is a chemical that disrupts hormonal activity of animals and humans at extremely low doses.[11] Endocrine disruptors are chemicals that mimic an organism's hormones, disrupting natural processes by sending false messages, blocking real messages, preventing synthesis of the body's own hormones, and accelerating the breakdown and excretion of hormones.[12] Endocrine disruption affects how an organism develops and functions and can cause severe damage during critical developmental stages.[13] Reproductive disorders, immune system dysfunction, thyroid disorders, types of cancer, birth defects and neurological effects have all been linked to endocrine disruption. Offspring of those affected by

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8 Nagler, J.J., et al. 2001. High Incidence of a Male-Specific Genetic Marker in Phenotypic Female Chinook Salmon from the Columbia River. *Environmental Health Perspectives* 109(1):67-69

9 Dodson, S.I., et al. 1999. Dieldrin Reduces Male Production and Sex Ratio in Daphnia (*Galeata mendotae*). *Toxicology and Industrial Health: An International Journal*, Vol.15, Nos. 1&2, 192-199

10 Kegley, Susan, Anne Katten, and Marion Moses. 2003. Secondhand Pesticides Airborne Pesticide Drift in California. (One in a series of reports by Californians for Pesticide Reform)

11 Tyrone Hayes et al., "Hermaphroditic, demasculinized frogs after exposure to the herbicide atrazine at low ecologically relevant doses," *Proceedings of the National Academy of Sciences* Vol. 99, No. 8 (April 16, 2002): 5476-5480, www.pnas.org/content/99/8/5476.abstract (Accessed November 3, 2011).

12 *See generally* Gwynne Lyons, Effects of Pollutants on the Reproductive Health of Male Vertebrate Wildlife-Males Under Threat, CHEM Trust, 2008

13 Center for Bioenvironmental Research. Environmental Estrogens, Wildlife and Human Health Effects. Available http://e.hormone.tulane.edu/learning/human-effects.html. (Accessed November 7, 2011).

endocrine disruptors may also suffer from lifelong health and reproductive abnormalities, including reduced fertility, altered sexual behavior, lowered immunity and cancer.[14]

Exposure to endocrine disruptors, even at extremely low doses, during critical windows of development of fetuses can have lasting negative impacts on the child's life.[15] Studies have demonstrated that babies conceived during spring when levels of pesticides, including atrazine, are highest, are more likely to develop birth defects.[16] These defects include cleft palate, spina bifida and Down syndrome.[17] Furthermore, atrazine has been linked to decreased sperm counts and reduced fertility.[18] A recent study found exposure to atrazine in drinking water, below EPA's maximum contaminant level, is associated with irregular menstrual cycle characteristics and reproductive hormone levels in women from agricultural communities.[19]

B. Atrazine exposure increases the risk of cancer

Numerous studies have shown links between atrazine and human cancers, particularly in communities surrounding heavy atrazine usage. The herbicide is linked with prostate cancer, and is found to retard mammary development and induce abortion in laboratory rats.[20] Several scientific studies have found a link between long-term exposure to atrazine and breast cancer. Non-Hodgkin's lymphoma is also associated with exposure.[21]

The International Agency for Research on Cancer reported an increase in mammary gland tumors in female rats exposed to atrazine from early life to adulthood.[22] A study of women

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14 Center for Bioenvironmental Research. Environmental Estrogens, Wildlife and Human Health Effects. Available http://e.hormone.tulane.edu/learning/human-effects.html. (Accessed November 7, 2011).

15 Theo Colborn, "Neurodevelopment and Endocrine Disruption," *Environmental Health Perspectives*, 112(9) (June 2004): 944-9.

16 Paul D. Winchester et al., "Agrichemicals in Surface Water and Birth Defects in the United States," *Acta paediatrica* 98(4) (April 2009):664-9. Epub January 22, 2009; *See* Land Stewardship Project and Pesticide Action Network North America, The Syngenta Corporation & Atrazine: The Cost to the Land, People & Democracy (January 2010) at 17

17 Paul D. Winchester et al. 2010.

18 Shanna H. Swan, "Semen quality in fertile U.S. men in relation to geographical area and pesticide exposure," *International Journal of Andrology* 29 (2006):62-8.

19 Lori A. Cragin, James S. Kesner et al., "Menstrual cycle characteristics and reproductive hormone levels in women exposed to atrazine in drinking water," *Environmental Research*, Vol. 111, Issue 8, 1293-1301 (November 2011).

20 Jennifer Sass and Paul Brandt-Rauf, "Cancer Incidence Among Triazine Herbicide Manufacturing Workers," *Journal of Occupational and Environmental Medicine*, Vol. 45, No. 4 (April, 2003), 343-344.; M.A. Kettles, et al., "Triazine exposure and breast cancer incidence: An ecologic study of Kentucky counties," *Environmental Health Perspectives*, Vol. 105, No. 11 (1997), 1222-1227.; R. Munger, et al., "Intrauterine growth retardation in iowa communities with herbicide-contaminated drinking water supplies," *Environmental Health Perspectives*. Vol. 105, No. 3 (March 1997), 308-314.; T.E. Arbuckle, T.E., et al., "An exploratory analysis of the effect of pesticide exposure on the risk of spontaneous abortion in an Ontario farm population," *Environmental Health Perspectives*, Vol. 109, No. 8 (2001), 851-857.; S. Swam, et al., "Semen quality in relation to biomarkers of pesticide exposure," *Environmental Health Perspectives*, Vol. 111, No. 12 (September 2003): 1478-84.

21 A.J. De Roos et al., "Integrative assessment of multiple pesticides as risk factors for non-Hodgkin's lymphoma among men," *Occupational and Environmental Medicine*, 60:E11 (2003).

22 International Agency for Research on Cancer (IARC), "Monographs of the evaluation of carcinogenic risks to humans," *IARC Monograph* 73 (1999):59-113.

from Kentucky's 120 counties showed a statistically significant increase in breast cancer risk with medium and high levels of atrazine exposure.[23] A study from the United Kingdom found a significant association between application of atrazine and breast cancer rates in rural Leicestershire.[24] Despite the research and alarming results, current EPA documents state that atrazine is not likely to cause cancer.[25] It is the position of two prominent breast cancer prevention groups that industry pressure was responsible for the EPA's mistaken characterization.[26]

C. Environmental Justice

While a great number of Americans are at risk from exposure to atrazine, farmworkers are most vulnerable. Not only are farmworkers at high risk of exposure in the fields, but many live in proximity to the farms they work, making them and their families susceptible to contaminated water or atrazine sprays that drift during application of the herbicide. Atrazine use is highest along the Mississippi River Basin; the herbicide contaminates the river with millions of pounds of atrazine from runoff, taking the pollution into some of America's poorest communities.

IV. Atrazine is contaminating America's water supply

Despite overwhelming evidence of negative health effects, Americans are exposed to atrazine in drinking water, ground water, rainfall and food supply. Once the herbicide leaches into groundwater, it can remain and contaminate the water for decades.[27] Approximately 75 percent of stream water and 40 percent of groundwater samples taken from agricultural areas contained atrazine, as reported by a U.S. Geological Survey study.[28] A report from the Natural Resources Defense Council ("NRDC") from August 2009,[29] based on data from EPA's Ecological Watershed Monitoring Program (testing surface water) and Atrazine Monitoring Program (testing drinking water), produced several major findings on the pervasiveness of atrazine in our water supply.

NRDC found high levels of atrazine in many drinking water systems. More than 90 percent of samples taken from 139 water systems had measurable levels of atrazine in 2003 and

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23 International Agency for Research on Cancer, "Monographs of the evaluation of carcinogenic risks to humans," *IARC Monograph* 73 (1999):59-113.
24 Kenneth Muir et al., "Breast cancer incidence and its possible spatial association with pesticide application in two counties of England," *Public Health* 118(7) (2004):513-20.
25 U.S. EPA, *Atrazine Updates- Cancer status update* (Washington DC: October, 2009) http://www.epa.gov/oppsrrd1/reregistration/atrazine/atrazine_update.htm#cancer (Accessed November 7, 2011).
26 Nancy Evans ed., *State of the Evidence 2006: What is the Connection Between Chemicals and Breast Cancer* (San Francisco: Breast Cancer Fund and Breast Cancer Action, 2006) http://www.bcaction.org (Accessed November 7, 2011).
27 Land Stewardship Project and Pesticide Action Network North America, January 2010, The Syngenta Corporation & Atrazine: The Cost to the Land, People & Democracy, at 8.
28 Gilliom RJ, et al. 2006. The Quality of Our Nation's Waters: Pesticides in the Nation's Streams and Ground Water, 1992-2001. U.S. Geological Survey Circular 1291.
29 NRDC Report, Poisoning the Well: How the EPA is Ignoring Atrazine Contamination in Surface and Drinking Water in the Central United States (August 2009).

2004.[30] Under the Safe Drinking Water Act,[31] no more than 3 parts per billion ("ppb") of atrazine is to be measured in drinking water, however 39 percent of water systems tested (54 water systems) had a one-time peak concentration of atrazine above 3 ppb.[32] One Illinois county registered at 39.69 ppb.[33] Surface water did not fare much better in the NRDC study. All of the 40 watersheds tested had detectable levels of atrazine.[34] Nine of the watersheds had at least one sample above 50 ppb and four watersheds had peak maximum concentrations in excess of 100 ppb.[35]

Also alarming is the USGS Report's finding that "concentrations of pesticides were frequently greater than water-quality benchmarks for aquatic life and fish-eating wildlife":[36]

> Of 186 stream sites sampled nationwide by the USGS, 57 percent of 83 agricultural streams had concentrations of at least one pesticide that exceeded one or more aquatic-life benchmarks at least one time during the year; 83 percent of 30 urban streams had concentrations of at least one pesticide that exceeded one or more aquatic-life benchmarks at least one time during the year; 42 percent of 65 mixed-land-use streams had concentrations of at least one pesticide that exceeded one or more aquatic-life benchmarks at least one time during the year.
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> In agricultural streams, most concentrations greater than a benchmark involved chlorpyrifos (21 percent of sites), azinphos-methyl (19 percent), atrazine (18 percent), *p,p'*-DDE (16 percent), and alachlor (15 percent).

Despite these findings, and the high potential for adverse effects associated with exposure to atrazine, EPA has not been addressing this problem. The spikes in atrazine concentrations are overlooked in EPA's monitoring program, because EPA focuses on average concentrations.[37] This ignores the obvious fact that weather events and seasonal application of herbicides control the levels recorded in both surface and drinking water samples. Furthermore, EPA chose to examine only 40 watersheds for atrazine contamination, deciding that these would be statistically representative of 1,172 vulnerable watersheds in the United States.[38] Thus, atrazine contamination is far more pervasive than the samples are suggesting.

30 NRDC Report, Poisoning the Well at 3.
31 42 U.S.C.A. § 300f et seq.
32 NRDC Report, Poisoning the Well at 3, 4.
33 NRDC Report, Poisoning the Well at 3, 4.
34 NRDC Report, Poisoning the Well at 3.
35 NRDC Report, Poisoning the Well at 3.
36 USGS 2007 Report.
37 NRDC Report, Poisoning the Well at 4.
38 NRDC Report, Poisoning the Well: How the EPA is Ignoring Atrazine Contamination in Surface and Drinking Water in the Central United States (August 2009) at 4, 5.

V. Atrazine's risks far outweigh its benefits as an herbicide

Atrazine is one of the most widely used herbicides in the United States.[39] American farmers apply approximately 76.5 million pounds of atrazine per year, with 86 percent applied on corn.[40] However, atrazine, as detailed above, is a known endocrine disruptor and dangerous to both humans and wildlife. Further, data suggests that atrazine provides minimal economic benefits to farmers who use it.[41] The United States Department of Agriculture estimates that banning atrazine would result in crop losses of only 1.19 percent and decreased corn acreage in production by only 2.35 percent.[42] This is much lower than industry estimates. For example, Italy and Germany banned atrazine nearly 20 years ago and have not seen any drop in corn productivity or total acreage of land in production for corn. Many farmers, in the U.S. and overseas, are using innovative production systems to prove that a corn crop can be produced without atrazine. Farmer-oriented information is available for producers seeking alternatives.[43] Based on this information, the harm associated with the application of atrazine clearly outweighs the benefits it confers upon American farmers.

VI. The EPA has a duty to protect human health and wildlife

The EPA regulates pesticides under the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA"). In addition, EPA has a duty to protect federally listed endangered and threatened species under the Endangered Species Act ("ESA"). These two statutes provide EPA with the discretion to cancel pesticide registrations as well as an obligation to follow the requirements of ESA.

A. EPA's Responsibilities under the Federal Insecticide, Fungicide, and Rodenticide Act

The EPA's regulatory authority under FIFRA provides a means and obligation to ban atrazine because of its unreasonable adverse effects on the environment. The EPA is responsible for the oversight of pesticide sales and use in the United States. Specifically, FIFRA charges the EPA with reviewing and registering chemicals for use as insecticides, fungicides, rodenticides, and pesticides in the U.S.[44] The EPA may register a pesticide only after making the following determinations: (1) the labeling complies with FIFRA's requirements; (2) the composition claims are warranted; (3) the pesticide will perform its intended function; and (4) the pesticide will not cause unreasonable adverse effects on the environment. Even after registering a pesticide,

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39 Land Stewardship Project and Pesticide Action Network North America, The Syngenta Corporation & Atrazine: The Cost to the Land, People & Democracy (January 2010) at 6.
40 EPA, Interim Reregistration Eligibility Decision for Atrazine (Washington D.C.: January 31, 2003).; EPA, Large Lakes and Rivers Forecasting Research Branch, "Lake Michigan Mass Balance Study- Atrazine," http://www.epa.gov/med/grosseile_site/LMMBP/atrazine.html (Accessed November 3, 2011).
41 NRDC Report, Poisoning the Well: How the EPA is Ignoring Atrazine Contamination in Surface and Drinking Water in the Central United States (August 2009) at 3.
42 NRDC Report, Poisoning the Well at 3.
43 Land Stewardship Project and Pesticide Action Network North America, The Syngenta Corporation & Atrazine: The Cost to the Land, People & Democracy (January 2010).
44 *See* 7 U.S.C. §§ 136-136y

however, the EPA retains discretionary involvement in and control over that registration. The EPA must periodically review registrations with a goal of reviewing each one every 15 years.

The EPA Administrator has the authority to cancel pesticide registrations whenever "a pesticide or its labeling or other material required to be submitted does not comply with the provisions of FIFRA or, when used in accordance with widespread and commonly recognized practice, generally causes unreasonable adverse effects on the environment."[45] The Administrator may immediately suspend a pesticide registration to prevent an imminent hazard.[46] An announcement by the Administrator of an intent to cancel a pesticide use often results in the registrant's voluntary cancellation of, or agreement to further constraints upon that use.

As discussed above, the scientific evidence is clear that atrazine is critically harming America's waters, wildlife, and human population. The EPA must use its authority under FIFRA to ban atrazine use throughout the United States and to begin detoxifying the nation from this dangerous herbicide.

B. EPA's Responsibilities under the Endangered Species Act

Under the ESA, EPA is required to reduce the impacts of pesticides, like atrazine, that pose substantial threats to listed species. The ESA was enacted, in part, to provide a "means whereby the ecosystems upon which endangered species and threatened species depend may be conserved . . . [and] a program for the conservation of such endangered species and threatened species . . . ."[47] Section 2(c) of the ESA establishes that it is "the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act."[48] The ESA defines "conservation" to mean "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary."[49] Similarly, Section 7(a)(1) of the ESA directs that the Secretary review "…other programs administered by him and utilize such programs in furtherance of the purposes of the Act."[50]

In order to fulfill the substantive purposes of the ESA, federal agencies are required to engage in consultation with FWS and the National Marine Fisheries Service ("NMFS") to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the adverse modification of habitat of such species . . . determined . . . to be critical . . . ."[51] At the completion of consultation, FWS or NMFS issues a biological opinion that determines if the

45 7 U.S.C. § 136d(b)
46 7 U.S.C. § 136d(c)
47 16 U.S.C. §§ 1531-1544; 16 U.S.C. § 1531(b)
48 16 U.S.C. § 1531(c)(1)
49 16 U.S.C. § 1532(3)
50 16 U.S.C. § 1536(a)(1)
51 16 U.S.C. § 1536(a)(2) ("Section 7 consultation")

agency action is likely to jeopardize the species. If so, the opinion may specify reasonable and prudent alternatives that will avoid jeopardy and allow the agency to proceed with the action.[52]

The ESA's Section 7 requirements apply to EPA's registration of pesticides, and its actions in exercising its continuing authority over pesticide regulation under FIFRA.[53] As discussed in *Wash. Toxics Coalition v. EPA*,[54] "because EPA has continuing authority over pesticide regulation, it has a continuing obligation to follow the requirements of the ESA."[55] The court also noted that EPA retains discretion to alter the registration of pesticides for reasons that include environmental concerns.[56]

Prolific scientific evidence, detailed throughout this comment letter, demonstrates that many endangered and threatened species in America are being jeopardized by atrazine pollution. In the Bay Area of California alone, atrazine is polluting the waters of multiple threatened or endangered species. These species include the endangered and threatened Chinook salmon, the threatened and endangered California tiger salamander, and the threatened coho salmon, steelhead trout, and Delta smelt. In addition, California's largest frog, the California red-legged frog, is federally listed as threatened under the ESA, yet continues to be detrimentally exposed to atrazine.

Consequently, pursuant to section 2 and section 7 of the ESA, EPA must satisfy its duty to avoid jeopardizing listed species, or adversely modifying their critical habitat. EPA must use its authority to ban atrazine from further use to avoid the continued adverse impacts of this herbicide on endangered and threatened species.

VII. Conclusion

The Center appreciates this opportunity to comment in support of a ban on use and production of atrazine. The scientific evidence presented above is unmistakable in showing that atrazine is detrimental to America. The benefits of using atrazine are far outweighed by the harm caused by this herbicide. We urge EPA to use their discretion under FIFRA and the ESA to protect our natural resources, communities and wildlife—particularly those most vulnerable—and ban use and production of atrazine.

We appreciate your consideration of these comments. Should you have any questions or concerns feel free to contact me at the information above.

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52 16 U.S.C. § 1536(b)
53 *Wash. Toxics Coalition v. EPA*, 413 F.3d 1024, 1032 (9th Cir. 2005) ("We agree with the Eighth Circuit that even though EPA registers pesticides under FIFRA, it must also comply with the ESA when threatened or endangered species are affected."); *Defenders of Wildlife v. Administration*, 882 F.2d 1294 (8th Cir. 1989) (affirming section 7's application to EPA's registration of pesticides)
54 413 F.3d at 1033
55 413 F.3d at 1033
56 *See* 7 U.S.C. §§ 136d(c)(1)-(2), 136(l).

Sincerely,

Jonathan Evans, Staff Attorney
Center for Biological Diversity

Tracy Cook, Law Clerk
Center for Biological Diversity

Exhibits
(Attached)

Center for Biological Diversity, 2006, Poisoning Our Imperiled Wildlife: San Francisco Bay Area Endangered Species at Risk from Pesticides, available at http://www.biologicaldiversity.org/campaigns/pesticides_reduction/bay_area/index.html.

Land Stewardship Project and Pesticide Action Network North America, January 2010, The Syngenta Corporation & Atrazine: The Cost to the Land, People & Democracy, available at http://www.landstewardshipproject.org/resources-pubs.html.

Natural Resources Defense Council Report, August 2009, Poisoning the Well: How the EPA is Ignoring Atrazine Contamination in Surface and Drinking Water in the Central United States, available at http://www.nrdc.org/health/atrazine/.

Natural Resources Defense Council Report, April 2010, Still Poisoning the Well: Atrazine Continues to Contaminate Surface Water and Drinking Water in the United States, available at http://www.nrdc.org/health/atrazine/.