November 20, 2014

Hon. Joseph Martens
Commissioner
New York State Department of Environmental Conservation
625 Broadway, 14th Floor
Albany, NY 12233

Re: Petition to List the Eastern Hellbender as an Endangered Species in New York

Dear Commissioner Martens:

Enclosed please find a Petition submitted pursuant to New York Environmental Conservation Law § 11-0311 requesting that the Department add the hellbender salamander (Cryptobranchus alleganiensis alleganiensis) to the list of endangered or threatened species established pursuant to ECL § 11-0535(1) and 6 NYCRR Part 182.

We would be happy to meet with you or your staff to discuss the contents of the Petition.

Respectfully submitted,

Christopher Amato
Staff Attorney

C: Kathy Moser, Assistant Commissioner for Natural Resources
Patricia Riexinger, Director, Division of Fish, Wildlife and Marine Resources
STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Petition of

AMY McMILLAN, Ph.D, ROBIN FOSTER, M.S.,
ALVIN R. BREISCH M.S., PETER ROSENBAUM, Ph.D.,
DONNA M. FERNANDES, Ph.D., DAVID CALLIGEROS,
JOHN R. DAVIS, LATIMER KELLS, JAMES PHILLIPS,
ANDREW SABIN, STEPHANIE STONE,
WENDY TOWNSEND, DAVID N. MILLER, JOHN BLEECH,
JULIE BOERNER, LYNN K. BENNETT, JASON GRINNELL,
DANIELLE MORRIS, SUBODH KUMAR,
CHRISTOPHER PENNUTO, MARY A. DURLAK,
DAVID PAWLAK, MARCIA BURNS, MARK W. SEVERSON,
SARAH CHUDYK, THOMAS D. WHITE,
CHERYL SLISZ, GARY W. PETTIBONE, JOHN LANG,
TINA M. WYNNE, SUSAN CHISLETT, JENNIFER JACKSON,
JEFFREY HAMMER, DOUGLAS RIDOLFI, LYNN YARMY,
MICHAEL A. HART, CHARLENE ROE,
PENNY FELSKI, MIO AKASHIMA, GARY STEELE,
ALICYN RINGLER, CATHERINE CARROLL,
ROB KRYWALSKI, DON MCGUIRE, KATRINA MCINTOSH,
DAVID BRIGHAM, MALIA SOMERVILLE,
DENISE MALONEY, JESSICA TURNER,
LYUBOV E. BURLAKOVA, BRIANNE L. TULUMELLO,
WENDY L. PATerson, ALEXANDER Y. KARATAYEV,
REBECCA J. JOHNSON, CHRISTINA SHEEHAN,
KELSEY LOTZ, PATRICK PETKASH, CYLE ABBEY,
SARA SLATSKY, MARIA DESISTO-PETKASH,
STEPHANIE RADZIK, CENTER FOR BIOLOGICAL DIVERSITY,
SIERRA CLUB ATLANTIC CHAPTER, and EARTHJUSTICE,

Pursuant to New York Environmental Conservation Law § 11-0311
To Add the Hellbender Salamander (Cryptobranchus alleganiensis alleganiensis)
To the List of Endangered and Threatened Species Under
ECL § 11-0535(1) and 6 NYCRR Part 182.

TO: HON. JOSEPH MARTENS, COMMISSIONER
New York State Department of Environmental Conservation
625 Broadway, 14th Floor
Albany, NY 12233
Introduction

1. Petitioners Amy McMillan, Ph.D., Robin Foster, M.S., Alvin R. Breisch, M.S., Peter Rosenbaum, Ph.D., Donna M. Fernandes, Ph.D., David Calligeros, John R. Davis, Latimer Kells, James Phillips, Andrew Sabin, Stephanie Stone, Wendy Townsend, David N. Miller, John Bleech, Julie Boerner, Lynn K. Bennett, Jason Grinnell, Danielle Morris, Subodh Kumar, Christopher Pennuto, Mary A. Durlak, David Pawlak, Marcia Burns, Mark W. Severson, Sarah Chudyk, Thomas D. White, Cheryl Slisz, Gary W. Pettibone, John Lang, Tina M. Wynne, Susan Chislett, Jennifer Jackson, Jeffrey Hammer, Douglas Ridolfi, Lynn Yarmy, Michael A. Hart, Charlene Roe, Penny Felski, Mio Akashima, Gary Steele, Alicyn Ringler, Catherine Carroll, Rob Krywalski, Don McGuire, Katrina McIntosh, David Brigham, Malia Somerville, Denise Maloney, Jessica Turner, Lyubov E. Burlakova, Brianne L. Tulumello, Wendy L. Paterson, Alexander Y. Karatayev, Rebecca J. Johnson, Christina Sheehan, Kelsey Lotz, Patrick Petkash, Cyle Abbey, Sara Slatsky, Maria DeSisto-Petkash, Stephanie Radzik, Center for Biological Diversity, Sierra Club Atlantic Chapter, and Earthjustice submit this petition pursuant to New York Environmental Conservation Law (“ECL”) § 11-0311 requesting that the New York State Department of Environmental Conservation (“DEC” or “Department”) afford greater protection to the hellbender salamander (Cryptobranchus alleganiensis alleganiensis) (“hellbender”) under ECL Article 11. Specifically, Petitioners request that the hellbender be added to the list of endangered or threatened species pursuant to ECL § 11-0535(1) and 6 NYCRR Part 182.

2. It is respectfully submitted that the hellbender salamander meets the criteria for listing as “endangered” because it is a native species that is in imminent danger of extirpation or extinction in New York. See ECL § 11-0535(1); 6 NYCRR § 182.2(e). Alternatively, the hellbender meets the criteria for listing as “threatened” because it is likely to become endangered
in the foreseeable future throughout all or a significant portion of its range. See ECL § 11-0535(1); 6 NYCRR § 182.2(y). Specifically, as described in detail below, the hellbender meets the following listing criteria:

1. The current number of viable and self-sustaining populations of the species statewide is insufficient to ensure continued survival of the species in the state;

2. The total number of reproducing individuals is currently insufficient to ensure the continued survival of the species in the state;

3. The species has declined non-cyclically throughout a significant portion of its range in New York;

4. The present or threatened destruction, modification or curtailment of the species’ habitat or range within the state threatens the continued survival of the species in New York;

5. The overuse of the species for commercial, sporting, scientific, educational, or other purpose threatens its continued survival of the species in New York;

6. Disease, pollution, contaminants, predation, or interspecific competition threatens the continued survival of the species in New York;

7. Existing regulatory mechanisms are insufficient to protect the species or its habitat;

8. The species is restricted geographically in New York; and

9. The species’ biology makes it highly susceptible to changes in its environment.

See 6 NYCRR § 182.3(b).

3. Based on the facts set forth herein, Petitioners respectfully request that the hellbender salamander be added to either the list of endangered species set forth at 6 NYCRR § 182.5(a)(4) or, alternatively, the list of threatened species at 6 NYCRR § 182.5(b)(4).

Petitioners

4. Petitioner Amy M. McMillan, Ph.D., resides at 973 Stony Point Road, Grand Island, New York, and is an Associate Professor in the Department of Biology at the State
University of New York at Buffalo. Dr. McMillan has conducted research on hellbender conservation in New York State, has published several peer-reviewed papers on this subject, and is a member of the New York State Hellbender Recovery Team. She has been involved with an international team that has published several papers on cryptobranchid biology and conservation. Dr. McMillan organized the 5th Hellbender Symposium in 2011, which brought together cryptobranchid researchers from around the world, and is involved in identifying hellbender populations in the eastern United States.

5. Petitioner Robin Foster, M.A., resides at 252 Victoria Boulevard, Kenmore, New York, and is a Ph.D. candidate in the Evolution, Ecology and Behavior program at the State University of New York at Buffalo. Ms. Foster has conducted research on hellbender conservation in New York State, has published several peer-reviewed papers on this subject, and is a member of the New York State Hellbender Recovery Team. She is continuing research with a team from the eastern United States identifying hellbender sites and is employing a multidisciplinary approach to understand causes of hellbender decline.

6. Petitioner Alvin R. Breisch, M.S., resides at 29 Fiddlehead Lane, Altamont, New York, and is an independent amphibian and reptile consultant. Mr. Breisch served for 29 years as Amphibian and Reptile Specialist with DEC and was Senior Wildlife Biologist in DEC’s Endangered Species Unit. Mr. Breisch is co-author of The Amphibians and Reptiles of New York State (Oxford Univ. Press, 2007).

7. Petitioner Peter Rosenbaum, Ph.D., resides at 250 County Route 24, Oswego, New York, and is Professor of Biological Sciences at the State University of New York at Oswego. Dr. Rosenbaum has conducted research and taught college level courses on New York
State reptiles and amphibians for over 30 years, and has a long-standing interest in the biology and conservation of hellbenders.

8. Petitioner Donna M. Fernandes, Ph.D., resides at 300 Parkside Avenue, Buffalo, New York, and is President and Chief Executive Officer of the Buffalo Zoo.

9. Petitioner David Calligeros resides at 21 Belvidere Street, Brooklyn, New York, and is a member of petitioner Center for Biological Diversity.

10. Petitioner John R. Davis resides at 735 Lakeshore Road, Essex, New York, and is a member of petitioner Center for Biological Diversity.

11. Petitioner Latimer Kells resides at 420 East 82nd Street, Apt. 4-D, New York, New York, and is a member of petitioner Center for Biological Diversity.

12. Petitioner James Phillips resides at 622 Lakeshore Road, Essex, New York, and is a member of petitioner Center for Biological Diversity.

13. Petitioner Andrew Sabin resides at 146 Bluff Road, Amagansett, New York, and is a member of petitioner Center for Biological Diversity.

14. Petitioner Stephanie Stone resides at 689 Fort Washington Avenue, New York, New York, and is a member of petitioner Center for Biological Diversity.

15. Petitioner Wendy Townsend resides at 77 Toad Road, Callicoon, New York, and is a member of petitioner Center for Biological Diversity.

16. Petitioner David N. Miller resides at 82 Southwick Drive, Orchard Park, New York.

17. Petitioner John Bleech resides at 1738 North Davis Road, East Aurora, New York.

18. Petitioner Julie Boerner resides at 326 Bird Avenue, Buffalo, New York.
22. Petitioner Subodh Kumar resides at 268 Cindy Drive, Williamsville, New York.
23. Petitioner Christopher Pennuto resides at 4636 West Overlook, Williamsville, New York.
24. Petitioner Mary A. Durlak resides at 465 South Street, East Aurora, New York.
27. Petitioner Mark W. Severson resides at 124 Lexington Avenue, Buffalo, New York.
28. Petitioner Sarah Chudyk resides at 57 Heritage Drive, Lancaster, New York.
29. Petitioner Thomas D. White resides at 59 Chaumont Drive, Amherst, New York.
30. Petitioner Cheryl Slisz resides at 49 Greendale Avenue, Tonawanda, New York.
32. Petitioner John Lang resides at 44 Erwin Street, Painted Post, New York.
33. Petitioner Tina M. Wynne resides at 2189 Fix Road, Grand Island, New York.
34. Petitioner Susan Chislett resides at 6064 Lake Avenue, Orchard Park, New York.
36. Petitioner Jeffrey Hammer resides at 3875 Lockport Road, Sanborn, New York.
37. Petitioner Douglas Ridolfi resides at 4116 Deer Lake Drive, Amherst, New York.

38. Petitioner Lynn Yarmy resides at 1218 North Baldwin Street, Johnson City, New York.


40. Petitioner Charlene Roe resides at 89 Unger Avenue, Buffalo, New York.

41. Petitioner Penny Felski resides at 821 Forest Avenue, Buffalo, New York. Ms. Felski is employed as a Keeper at the Buffalo Zoo.

42. Petitioner Mio Akashima resides at 53 Robie Street, Buffalo, New York.

43. Petitioner Gary Steele resides at 696 Crescent Avenue, Buffalo, New York. Mr. Steele is employed as an Apprentice at the Buffalo Zoo.

44. Petitioner Alicyn Ringler resides at 640 Montrose Avenue, Buffalo, New York. Ms. Ringler is employed as an Administrative Assistant at the Buffalo Zoo.

45. Petitioner Catherine Carroll resides at 193 Treadwell Avenue, Tonawanda, New York. Ms. Carroll is employed as a Keeper at the Buffalo Zoo.

46. Petitioner Rob Krywalski resides at 37 South Ellington Street, Depew, New York.

47. Petitioner Don McGuire resides at 7159 Ridge Road, Lockport, New York.

48. Petitioner Katrina McIntosh resides at 260 Danbury Drive, Cheektowaga, New York. Ms. McIntosh is employed as a Keeper at the Buffalo Zoo.

49. Petitioner David Brigham resides at 260 Independence Drive, Orchard Park, New York. Mr. Brigham is employed as a Keeper at the Buffalo Zoo.

50. Petitioner Malia Somerville resides at 377 Starin Avenue, Buffalo, New York.
51. Petitioner Denise Maloney resides at 25 Fairview Court, Grand Island, New York. Ms. Maloney is employed as Director of Administration and Finance at the Buffalo Zoo.

52. Petitioner Jessica Turner resides at 285 Michael Avenue, Sloan, New York. Ms. Turner is employed as an Accounting Clerk at the Buffalo Zoo.

53. Petitioner Lyubov E. Burlakova resides at 349 Woodbridge Avenue, Buffalo, New York.

54. Petitioner Brianne L. Tulumello resides at 9 West Cavalier Drive, Cheektowaga, New York.


56. Petitioner Alexander Y. Karatayev resides at 349 Woodbridge Avenue, Buffalo, New York.

57. Petitioner Rebecca J. Johnson resides at 320 Normal Avenue, Buffalo, New York.

58. Petitioner Christina Sheehan resides at 16 Lanesboro Street, Binghamton, New York. Ms. Sheehan is Interim Curator and Veterinary Assistant at the Binghamton Zoo.

59. Petitioner Kelsey Lotz resides at 226 Court Street, Binghamton, New York.

60. Petitioner Patrick Petkash resides at 5 Tobey Road, Harpursville, New York.

61. Petitioner Cyle Abbey resides at 534 Chenango Street, Binghamton, New York.

62. Petitioner Sara Slatsky resides at 1025 Reynolds Road, Johnson City, New York.

63. Petitioner Maria DeSisto-Petkash resides at 5 Tobey Road, Harpursville, New York.

64. Petitioner Stephanie Radzik resides at 1 McNamara Avenue, Binghamton, New York.
65. Petitioner Center for Biological Diversity ("CBD") is a 501(c)(3) not-for-profit, public interest corporation with over 675,000 members, including over 3,000 members in New York State. CBD’s members are dedicated to protecting diverse native species and habitats through science, policy, education, and environmental law. CBD’s Climate Law Institute works to promote sound conservation strategies in order to protect its members’ recreational, wildlife viewing, scientific, and educational interests. CBD’s members derive recreational, conservation and aesthetic benefits from the existence of rare species in the wild, including species that are in need of additional legal protections such as the hellbender salamander.

66. Petitioner Sierra Club Atlantic Chapter is a 501(c)(3) not-for-profit, volunteer-led environmental organization of 38,000 members statewide dedicated to protecting New York’s air, land, water, and remaining wild places. Its offices are located at 353 Hamilton Street, Albany, New York 12210. Sierra Club’s mission is to explore, enjoy, and protect the wild places of the Earth; to practice and promote the responsible use of the Earth’s resources and ecosystems; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives. Sierra Club’s mission includes protecting rare and endangered species and the habitats upon which they depend for survival.

67. Petitioner Earthjustice is a national not-for-profit environmental law firm that provides legal representation for environmental and community groups, local governments, Indian nations, and others on a wide range of environmental and natural resource issues, including the protection and conservation of endangered and threatened species of wildlife.

**Hellbender Biology and Natural History Make This Species Highly Susceptible to Changes in its Environment**
68. The hellbender (*Cryptobranchus alleganiensis* Daudin) is North America’s only cryptobranchid species, and one of the world’s largest salamanders. Hellbenders are long-lived. The longest recorded lifespan in captivity is 29 years (Nigrelli 1954), and the lifespan of a hellbender in the wild may exceed 30 years (Taber et al. 1975).

69. Adult hellbenders usually range in size from 29 – 51 cm total length, with record lengths of 68.6 cm for males and 74 cm for females (Fitch 1947, Petranka 1998).

70. The hellbender is completely aquatic, employing an unusual respiratory strategy. Larvae have functional external gills, which become reduced with age and generally disappear by the end of the second year (Bishop 1941). Adult respiration is almost entirely cutaneous, with the lungs most likely functioning primarily as hydrostatic organs. Adaptations including skin capillaries penetrating to the surface cell layer, a dorsoventrally flattened body, numerous skin folds, and behavioral rocking motions help bring in oxygen (Guimond and Hutchinson 1973).

71. Hellbenders are habitat specialists, requiring cool, clean, flowing water (Smith 1907, Wheeler et al. 2003). They are primarily nocturnal, foraging along the stream bottom for crayfish and other prey, including fish, worms, frogs, and toads (Smith 1907). During the daytime they remain under large, flat slabs of rock, which are an essential component of hellbender habitat, providing cover and nest sites (Bishop 1941). Hellbenders are more active in the daytime during the breeding season, which occurs in the late summer and early fall in New York State (Bishop 1941).

72. Adult hellbenders are relatively sedentary; most remain at their site of capture, with few exceptions (see Nickerson and Mays 1973a, Humphries and Pauley 2005, Peterson 1987, Blais 1996, and Foster 2006). Very little is known about juvenile dispersal, although there is some indication that within a stream or river it might be extensive (Feist et al. 2014).
73. The habitat needs of the hellbender make it sensitive to environmental changes. Life history traits, including a long life span, an unusual respiratory system, and sedentary habits, make it susceptible to local extirpation and potentially slow to adapt to environmental changes.

**The Species is Restricted Geographically in New York**

A. **Historical Distribution in New York**

74. The earliest published accounts of hellbenders in New York come from Bishop (1941), who reported large numbers of hellbenders in streams in the Allegheny River and its tributaries. Bishop described taking thirteen specimens within the course of a single hour. An earlier account from Reese (1903) indicated that hellbenders were abundant in French Creek, but it is unclear whether he was referring to a stretch of this creek in New York or Pennsylvania. Early records of hellbender sightings exist for the numerous streams in the Allegheny River watershed.

75. Historically, three streams were documented to have hellbenders in the Susquehanna watershed (Bishop 1941, Bothner and Gottlieb 1991, Blais 1996). Historic newspaper accounts (from the early to mid-1900s) indicate that anglers regularly caught hellbenders on the main stem of the Susquehanna River in New York. For example, in 1964 the *Oneonta Star* reported that a group of high school boys took more than a dozen hellbenders from the river during an afternoon of fishing.

76. Bothner and Gottlieb (1991) reported locating a total of 29 hellbenders in the Susquehanna drainage during a two-year search, which took place during the late summer and early fall seasons of 1981 and 1982. Although all major tributaries were searched, hellbenders were only located on the Susquehanna and Unadilla Rivers, where they were present in all but one of the previously recorded sites, and were also found at several new locations.
77. A second study of the Susquehanna drainage located 25 hellbenders on Butternut Creek, a tributary of the Unadilla River. These animals were discovered over the course of nine mark-recapture surveys, totaling 107.2 person hours. During an additional 158 person hours spent searching historic sites in the drainage, no hellbenders were located (Blais 1996).

78. Between 1981 and 1988, the Allegheny River and its major tributaries were searched and a total of 303 hellbenders were located. All historic sites but one remained occupied, and new sites were discovered on the Allegheny River, Dodge Creek, and Tunungwant Creek (Bothner and Gottlieb 1991).

Figure 1. Historic and current range of the hellbender (Cryptobranchus alleganiensis alleganiensis) in New York State (NYS DEC Amphibian and Reptile Atlas, unpublished data).

B. Current Distribution and Status in New York Indicate That the Species Has Declined Non-Cyclically Throughout a Significant Portion of its Range

79. Recent studies indicate that hellbender population numbers in the Allegheny drainage have experienced a rapid and drastic decline. In 2004 and 2005, the sites surveyed in
the 1980’s were resurveyed (Foster 2006, Foster et al. 2009). One historic site was extirpated and population numbers declined by an average of 44% across all sites. Only one site had a population of equivalent size to what was found in the 1980’s survey (Table 1 and Figure 2).

80. Although a few new hellbender sites have recently been discovered in the Allegheny drainage, the capture numbers have been small and it is questionable whether these populations are sustainable.

Table 1: Estimates of hellbender population size and ecological density for eight sites in the Allegheny River Drainage during the 1980s (modified from Gottlieb, 1991) and in 2004-05. Population size estimates were calculated using a variation of the Lincoln-Peterson Index. aFive hellbenders were located during the recapture event. bSurveyed in 1985 and in 1988. (From Foster et al. 2009).

<table>
<thead>
<tr>
<th>Site</th>
<th>Site Area (m²) (%) habitable</th>
<th>Estimated N (± 95% CI)</th>
<th>Ecological Density (#/10m² habitable area)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>424 2355</td>
<td>3.0 0*</td>
<td>2.63 0</td>
</tr>
<tr>
<td>(2)</td>
<td>(2) (2.9)</td>
<td>(2.0) (2)</td>
<td>(3.2) (16.2)</td>
</tr>
<tr>
<td>2</td>
<td>1208 12,240</td>
<td>6.0 24.8</td>
<td>1.67 – 2.5 1.01</td>
</tr>
<tr>
<td>(2-3)</td>
<td>(2) (1.6)</td>
<td>(2.0) (2)</td>
<td>(1.9) (16.2)</td>
</tr>
<tr>
<td>3</td>
<td>806 4512</td>
<td>5.0 0</td>
<td>1.23 – 3.13 0</td>
</tr>
<tr>
<td>(2-5)</td>
<td>(1) (2.7)</td>
<td>(2.0) (2)</td>
<td>(1.2) (16.2)</td>
</tr>
<tr>
<td>4*</td>
<td>624 3640</td>
<td>23.3 (19.1)</td>
<td>35</td>
</tr>
<tr>
<td>(10)</td>
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<td>(35.4) (11.6)</td>
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<td>5</td>
<td>6048 8901</td>
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<td>49.4</td>
</tr>
<tr>
<td>(8-10)</td>
<td>(6) (31.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2082 11,666</td>
<td>24.2 10.0</td>
<td>1.43 – 2.0 0.85</td>
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<tr>
<td>(6-8)</td>
<td>(1) (17.4)</td>
<td>(6.9) (1)</td>
<td>(3) (6.9)</td>
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<td>1592 4554</td>
<td>52.0 22.5</td>
<td>4 – 5.56 1.64</td>
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<tr>
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<td>(3) (12.6)</td>
<td>(10.0) (3)</td>
<td>(12.6) (6.9)</td>
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<td>14,003 15,741</td>
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<td>0.61 – 1.08 0.46</td>
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<td>(3-5)</td>
<td>(3) (14.6)</td>
<td>(13.2) (3)</td>
<td>(14.6) (13.2)</td>
</tr>
</tbody>
</table>
FIG. 2. Size class distribution of Hellbenders captured in the Allegheny River drainage during the fall seasons of 2004 and 2005, as compared to historical data from Hellbenders captured during the fall seasons of 1983-85 and 1988 (Bothner and Gottlieb, 1991; Gottlieb, 1991). The size distributions differ significantly between the two time periods ($\chi^2 = 17.393$, df = 4, $P < 0.005$). 

81. Hellbender populations in the Susquehanna drainage are also in serious jeopardy (Table 2). Intensive searches in the last several years have revealed only two hellbenders in one of the most populous historically occupied sites (T. Bell, pers. comm.) and repeated searching in many other historic areas have resulted in either zero or one hellbender captures (Quinn 2010, Quinn et al. 2013). It is therefore likely that hellbenders at several of these sites have been extirpated.

82. Thorough surveys by Robin Foster and DEC over the last three field seasons (2012-2014) have found no hellbenders in 25 sites identified as containing suitable habitat.

83. Based on the above data, the total number of reproducing individuals is currently insufficient to ensure the continued survival of hellbenders in the state, and the current number of viable and self-sustaining populations of the species statewide is insufficient to ensure the
continued survival of the species in the state. Consequently, hellbenders are in imminent danger of extirpation or extinction in New York.

Table 2. Numbers of hellbenders reported in the Susquehanna River watershed before and after 2000. Pre-2000 numbers of animals reported include the following sources: Soule and Lindberg 1991; Breisch (memo to NYSDEC) 1990, newspaper articles, and NYS Natural Heritage records. Post-2000 reports include results from three systematic surveys of the watershed, totaling hundreds of person-hours. *Additional records from the 1930s list hellbenders in the mainstem Susquehanna as “abundant” but do not provide actual numbers (Bishop, 1941).

<table>
<thead>
<tr>
<th>Stream</th>
<th>Number of Animals Reported Before 2000</th>
<th>Number of Animals Reported Since 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tributary 1</td>
<td>51</td>
<td>1</td>
</tr>
<tr>
<td>Tributary 2</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Tributary 3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Susquehanna Mainstem</td>
<td>27*</td>
<td>2</td>
</tr>
</tbody>
</table>

**Existing Regulatory Mechanisms Are Insufficient to Protect the Species or its Habitat**

84. The hellbender is currently listed in New York as a “species of special concern,” see 6 NYCRR § 182.5(c)(4)(i), which means that the Department has determined that it is “at risk of becoming threatened in New York.” Id. § 182.2(u). In 2006, New York State passed legislation authorizing the Department to promulgate regulations concerning the taking, importation, transportation, possession or sale of any species of special concern, but DEC has not promulgated regulations pursuant to that general statutory authorization or regarding protection of hellbenders specifically. See ECL § 11-0535(3).

85. The federal government does not offer any protection or special status to eastern hellbenders, although the Ozark subspecies was listed as endangered in 2010. The U.S. Fish and Wildlife Service considers the hellbender a species of conservation concern and is preparing a
status assessment to determine whether federal protection is warranted. The draft status
assessment (reviewed independently by McMillan and Foster in 2012) cites widespread
extirpation and decreasing population sizes of hellbenders throughout their range (Mayasich et
al. 2003, Wheeler et al. 2003, Foster et al. 2009, Kaunert 2011) and unabated threats including
disease, human-mediated habitat loss, and pollution. However, federal protection is likely years
away from becoming a reality.

The Continued Survival of the Hellbender in New York is Threatened by Habitat Destruction
Or Modification, Overuse of the Species, Disease, Pollution and Predation

86. The hellbender in New York faces grave threats, including modification and loss
of habitat, water quality degradation, inadvertent collection by anglers, invasive species, and
disease.

87. One of the most significant threats to hellbenders is modification or loss of
habitat, including siltation, impoundment, dams/fragmentation, and degradation of water quality.
Siltation is believed to impact habitat of adults and juveniles, burying potential nesting sites and
filling interstitial spaces in course substrate. Increased sediment loads also may destroy eggs,
and even reduce crayfish (prey) abundance. Furthermore, increased sediment may impact
respiration in these primarily skin-breathing animals. Sources of sediment include mining, road
construction, agriculture, logging, and development in riparian areas.

88. Dam construction fragments hellbender habitat, reduces water flow and dissolved
oxygen, and sometimes increases temperature. In the 1930s, the Allegheny River in Allegany
State Park was known for having a high abundance of hellbenders (based on newspaper accounts
from the 1930s). This site was flooded by the opening of the Kinzua Dam in 1965.
89. Adverse water quality impacts to hellbender habitat may include thermal or chemical pollution (Mayasich et al. 2003, USFWS 2004), as well as water withdrawal, sedimentation, and pollutants. Habitat disturbance, largely due to recreational activities, also may impact hellbender populations. Recreational watercraft and ATV use in areas used by hellbenders could have negative consequences for hellbenders (USFWS 2004). Additionally, herpetological enthusiasts repeatedly visiting sites and flipping over rocks in search of hellbenders can be problematic. There is evidence that a site in the Susquehanna drainage that was visited annually no longer supports a viable population of hellbenders.

90. Another significant threat to the hellbender is collection. In the past this was for scientific and educational uses (Branch 1933) or for the commercial pet trade, but unintentional harvest by recreational anglers continues to be a problem. Mortality related to recreational fishing is largely the result of misconceptions about hellbenders. Some anglers erroneously believe that hellbenders are poisonous, and that they destroy game fish. Historic newspaper accounts (from about 1850 through the early 1970s) almost always indicate that the hellbender(s) caught was(were) killed. Recent conversations with ‘bank’ anglers indicate that older generations continue to consider hellbenders as ‘vermin’, although younger anglers seem more interested in them as a unique species (Foster pers. comm.). In the past, there even have been reports of organized hellbender hunts. For example, in the 1930s the Allegany School of Natural History held an annual ‘Hellbender Party’ during which students caught as many hellbenders as they could and stuffed them for museums (Life Magazine 1938).

91. Disease, fungal infections, and parasites have been associated with some amphibian declines. *Saprolegnia*, or water mold, infections have been reported in captive hellbenders (Smith 1907). Three species of nematodes (*Falcaustra catesbeiana*, *Urodelnema*...
*mackini, Kamegainema cingula* and one species of cestode (*Proteocephalidae* gen. sp.) have been identified as parasites of hellbenders (Hasegawa and Ikeda 2003). Most recently, chytrid fungus, *Batrachochytrium dendrobatidis*, has been implicated in global amphibian declines (Berger et al. 1998) and has been found in other hellbender populations (e.g. Bodinof et al. 2011). This chytrid has been found in hellbenders in the Allegheny drainage as well (Kenneth Roblee, pers. comm.) but it is unclear what impact this disease will have on the present hellbender populations.

92. Recent work in the Allegheny drainage suggests chytrid could have very serious and long term impacts on hellbenders. Another emerging disease with potential to severely impact hellbender populations is ranavirus (Daszak et al. 1999, Kik et al. 2011), which is currently being tested for in New York hellbender populations.

93. Some researchers believe that predation and intraspecific aggression play a role in hellbender declines. Natural predators of hellbenders are thought to include northern pike, muskellunge, turtles, and water snakes (Nickerson and Mays 1973b). Several state agencies have speculated that introduced game fish may detrimentally impact hellbender populations (Mayasich et al. 2003).

94. Abnormalities and wounds are relatively common in New York hellbenders (Foster 2006), and while these abnormalities are unlikely to have any major impact on populations by themselves, they may exacerbate impacts due to other threats (Miller and Miller 2005).

95. Finally, introduced rusty crayfish (*Orconectes rusticus*), may be impacting hellbenders in New York streams. A survey in the summer of 2014 revealed large populations of rusty crayfish in the Susquehanna drainage in sites where hellbenders were expected to be found.
In the Pennsylvania Susquehanna rusty crayfish invasion seems to be associated with a decline in hellbender populations (Peter Petokas, pers. comm.).

**Summary**

96. New York is at the northern edge of the eastern hellbender salamander’s range. With projected changes in climate, New York may be a critical region for endurance of hellbender populations.

97. Hellbenders face numerous threats in New York, including sedimentation, low water quality, lack of habitat, and disease. Significant declines in hellbender populations in both the Allegheny and Susquehanna watersheds suggest that this species, without protection, could become extirpated in the near future in the Susquehanna drainage, and may also disappear from the Allegheny drainage.

**WHEREFORE**, the undersigned Petitioners respectfully request pursuant to ECL § 11-0311 that the hellbender salamander be added to either the list of endangered species set forth at 6 NYCRR § 182.5(a)(4) or, alternatively, the list of threatened species at 6 NYCRR § 182.5(b)(4).

Dated: New York, New York  
November 20, 2014
Literature Cited


I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

Amy McMillan  
973 Stony Point Road  
Grand Island, NY 14072

Robin Foster  
252 Victoria Blvd.  
Kenmore, NY 14217
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

29 Fiddlehead Lane
Altamont, NY 12009

11 Oct 2014
Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

PETER A. ROSENBAUM, Ph.D.

[Name]

September 13, 2014

(Date)

(Signature)
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

Donna M. Fernandes, PhD

October 8, 2014

President/CEO Buffalo Zoo
300 Parkside Ave Buffalo, NY 14214
To Whom it May Concern,

I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

D. Calligeros
407 North Broadway
Upper Nyack, NY 10960
Member of the Center for Biological Diversity

22 September 2014
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]

[Name]

[Date]

[9/21/14]
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

Latimer Kells
420 East 82\textsuperscript{nd} Street
Apartment 4-D
New York, NY 10028

Affiliation: Center for Biological Diversity

Date: 9/22/14
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

JAMES PHILLIPS

Date

10/10/07
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

9/11/2014
Date
My name is Stephanie Stone. I live at 689 Fort Washington Avenue, #3d, New York, NY 10040. I am a member of the Center for Biological Diversity and having read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species, I agree with and support the Petition.

Stephanie Stone

[Name]

10/12/14

Date
Wendy Townsend  
77 Toad Road  
Callicoon, NY 12723  
author, and member of Center for Biological Diversity  

I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

September 15, 2014  
Wendy Townsend
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

David Miller
82 Southwick Drive
Orchard Park, NY 14127

10/9/14
Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

Date: 10/09/2014

John Bleech
1738 North Davis Rd
East Aurora, NY 14052
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

Julie Boerres

326 Bird Ave
Buffalo, NY 14213

10-10-14  Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]  

Date

10/15/14  Lynn K. Bennett  

243 E RK RD  

GRAND ISLAND, NY 14072
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]  Jason Grinell  10/14/14
[Name]  Jason Grinell  Date
71 E Toulon Drive, Cheektowaga, NY 14227
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

71 E Toulu Dr
Cheektowaga NY
14227

10/15/14 Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

Subodh Kumar
268 Cindy Drive
Williamsville, NY 14221

10/16/2014

Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

Christopher Pennuto

4636 West Overlook, Williamsville, NY 14221

15 Oct, 2014
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]

Mary D. Derleth
465 South St
East Zicora, NY 14052

Oct 9, 2014
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]  

David Pawlak  
15 Ivan Dr.  
Cheektowaga, NY 14227

10-9-2014
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

Marcia Burns  
[Name]  

Marcia Burns  
208 Norwood Drive  
West Seneca, N.Y. 14224

10/9/14  
Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

Mark W. Severson
124 Lexington Ave.
Buffalo, NY 14222
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

Sarah Chudyk
57 Heritage Drive
Lancaster NY 14086

10/9/2014
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]  

10/19/2014  
Date  

59 Chaumont Dr.  
Amherst NY 14221
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]

Cheryl Slize

41 Greeddale Ave
Tonawanda, NY 14150

10/9/14
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

Gary C. Petersen

[Name]

10/9/14

Date

146 Old Farm Circle
Williamsville, NY 14221
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

10/09/14 Date

John Lang
44 Erwin St.
Painted Post NY 14870
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]  
Tina M. Wynne  
2189 Fix Rd  
Grand Island, NY 14072  

Date  
10/9/14
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]  Susan Chislett

10-9-14

6064 Lake Ave
Orchard Park NY 14127
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]

[Name]

10/9/14
Date

Jennifer Jackson
6814 Kimberly Dr.
Lockport, NY 14094
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]  

[Name]  

3875 Lockport Rd  
Sandown, NY 14132  

10/9/14  

Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

[Signature]

Date: Oct. 10, 2014

Douglas Ridolfi
4116 Deer Lakes Dr.
Amherst, NY 14228
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]

[Name]

10/9/14
Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

10/22/14

Date

MICHAEL A. HART
6909 CAMPBELL BLVD
APT G.
NORTH TONAWANDA, NY 14120
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

Charlene Roe  Charlene Roe  10-08-14
[Name]     [Signature]     [Date]
39 Unger Avenue  Buffalo, NY  14210
[Address]

Ellen Caine  Ellen Caine  10/9/14
[Name]     [Signature]     [Date]
148 Murray Street  Fort Erie, ON  Canada (L2A 0B3)
[Address]

[Signature]     [Date]
5/ West Gaskill Rd  NY  K/Thom
[Address]

Penry Feldski  Penry Feldski  10/9/14
[Name]     [Signature]     [Date]
821 Forest Ave #3  Buffalo, NY  14209
[Address]

Mitsuko Akashima  Mitsuko Akashima  10/10/14
[Name]     [Signature]     [Date]
53 Robie St.  Buffalo, NY  14217
[Address]

Gary Steele  Gary Steele  10/13/14
[Name]     [Signature]     [Date]
696 Crescent Ave.  Apt.  Lower  Buffalo, NY  14216
[Address]

Alicyn Ringler  Q/R  10/13/2014
[Name]     [Signature]     [Date]
640 Montrose Ave  Buffalo, NY  14223
[Address]

Catherine Carroll  G/C  10/13/14
[Name]     [Signature]     [Date]
193 Treadwell Rd.  Tonawanda, NY  14150
[Address]
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]
[Name]
[Address]
[Date]

Name: Rob Krywalski
Address: 37 S. Ellington Depew NY 14043

Name: Don McGuire
Address: 915A Ridge Rd Pansoville NY 14157

Name: Katrina McIntosh
Address: 260 Danbury Dr Cheektowaga NY 14225

Name: David Brigham
Address: 260 Independence Dr. Orchard Park NY 14127

Name: Maria Somerville
Address: 377 Starin Ave, Buffalo NY 14216

Name: Deana B. Moloney
Address: 25 Fairview at Grand Island NY 14072-2949

Name: Jessica Turner
Address: 285 Michael Ave. Sloan NY 14212
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

Lyubov E. Burlakova  
[Name]  

Lyubov E. Burlakova  

Brianne L. Tulimello  

Wendy L. Paterson  

Alexander Y. Karatayev  

Rebecca Jo Johnson  

Date  
10/20/2014  

10/20/2014  

10/20/2014  

10/20/2014  

Adresses:

- L. Burlakova, A. Karatayev - 349 Woodbridge Ave  
  Buffalo, NY 14214  
- W. Paterson - 1799 Delaware Ave., Buffalo, NY 14216  
- B. Tulimello - 9 West Cavalier Dr, Cheektowaga, NY 14227  
- R. Johnson - 320 Normal Avenue Buffalo, NY 14213
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]

10/8/2014
Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]  

10/9/14  
Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]

[Name] 10/9/14 Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]

[Name]

10/8/15

Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name]  

Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Name] 10/7/14 Date
I have read the foregoing Petition to the New York State Department of Environmental Conservation to list the hellbender salamander to the New York State list of endangered and threatened species and I agree with and support the Petition.

[Signature]

[Name]

[Date] 10/11/19
CENTER FOR BIOLOGICAL DIVERSITY

By: Mollie Mattes

Mollie Matteson
Senior Scientist
Christopher Amato, Esq.
48 Wall Street, 19th Floor
New York, NY 10005
Tel: 212-845-7390
camato@earthjustice.org