DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R3–ES–2010–0039] [92220-113-000; ABC Code: C6]

RIN 1018-AW62

Endangered and Threatened Wildlife and Plants; Proposed Rule to remove the Lake Erie Watersnake (*Nerodia sipedon insularum*) from the Federal list of Endangered and Threatened Wildlife

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; critical habitat prudency determination; notice of availability draft post-delisting monitoring plan.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to remove the Lake Erie Watersnake (*Nerodia sipedon insularum*) from the List of Threatened and Endangered Wildlife due to recovery. This action is based on a review of the best available scientific and commercial data, which indicate that the subspecies is no longer endangered or threatened with extinction, or likely to become so within the foreseeable future. Based on our determination that the Lake Erie Watersnake is no longer endangered or threatened with extinction, we have also determined that designation of critical habitat for the Lake Erie Watersnake is not prudent. We seek information, data, and comments from the public regarding the Lake Erie Watersnake, this proposal to delist, and the draft post-delisting monitoring plan. This proposal implements the recommendations from the 5–year status review initiated on April 22, 2008 (73 FR 21643).

DATES: We will consider comments received on or before August 2, 2010. We must receive requests for public hearings, in writing, at the address shown in the **FOR FURTHER INFORMATION CONTACT** section by July 16, 2010.

ADDRESSES: You may submit comments by one of the following methods:

- Federal eRulemaking Portal: *http://www.regulations.gov*. Follow the instructions for submitting comments.
- U.S. mail or hand-delivery: Public Comments Processing, Attn: FWS-R3-ES-2010-0039; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, Suite 222; Arlington, VA 22203.

We will not accept comments by e-mail or fax. We will post all comments on *http://www.regulations.gov*. This generally means that we will post any personal information you provide us (see the **Public Comments** section below for more information).

FOR FURTHER INFORMATION CONTACT: Mary Knapp, Field Office Supervisor, or Megan Seymour, Wildlife Biologist, U.S. Fish and Wildlife Service Ohio Field Office, 4625 Morse Road, Suite 104, Columbus, OH 43230 (telephone: 614-416-8993). Individuals who are hearing-impaired or speech-impaired may call the Federal Relay Service at (800) 877-8337 for TTY assistance.

SUPPLEMENTARY INFORMATION:

Public Comments

We intend that any final action resulting from this proposal will be as accurate and effective as possible. Therefore, we request data, comments, new information, or suggestions from the public, other concerned governmental agencies, the scientific community, Tribes, industry, or any other interested party on this proposed rule. We particularly seek comments concerning:

(1) Biological information concerning this subspecies;

(2) Relevant data concerning any current or likely future threats (or lack thereof) to this subspecies, including the extent and adequacy of Federal and State protection and management that would be provided to the Lake Erie Watersnake as a delisted subspecies;

(3) Additional information concerning the range, distribution, population size, and population trends of this subspecies;

(4) Current or planned activities in the subject area and their possible impacts on this subspecies;

(5) What regional climate change models are available, and whether they are reliable and credible to use as step–down models for assessing the effect of climate change on the species and its habitat; and

(6) Our draft post-delisting monitoring plan.

You may submit your comments and materials considering the proposed rule by one of the methods listed in the **ADDRESSES** section. We will not consider comments sent by e-mail or fax or to an address not listed in the **ADDRESSES** section.

If you submit a comment via *http://www.regulations.gov*, your entire comment—including any personal identifying information—will be posted on the Web site. If you submit a hardcopy comment that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post hardcopy comments on *http://www.regulations.gov*.

Comments and materials we receive, as well as supporting documentation we use in preparing this proposed rule, will be available for public inspection on *http://www.regulations.gov*, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Ohio Field Office (see **FOR FURTHER INFORMATION CONTACT** section). You may obtain copies of the proposed rule on the Internet at *http://www.regulations.govat* Docket Number FWS-R3-2010-0039, or by mail from the Ohio Field Office (see **FOR FURTHER INFORMATION CONTACT** section).

Public Hearing

The Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days after the date of this publication in the **Federal Register.** Such requests must be made in writing and addressed to the Field Supervisor (see **FOR FURTHER INFORMATION CONTACT** section). We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings at least 15 days before the first hearing.

Background

The Lake Erie Watersnake is a subspecies of the Northern Watersnake (*N. sipedon sipedon*) that occurs primarily on the offshore islands of western Lake Erie in Ohio and Ontario, Canada, but also on a small portion of the U.S. mainland on the Catawba and Marblehead peninsulas of Ottawa County, Ohio (Conant and Clay 1937, p. 2; King 1986, p. 760). Lake Erie Watersnakes are uniformly gray or brown, and have either no banding pattern, or have blotches or banding that are either faded or reduced (Conant and Clay 1937, pp. 2-5; Camin and Ehrlich 1958, p. 504; King 1987, pp. 243-244) . Female Lake Erie Watersnakes grow up to 1.1 meters (m) (3.5 feet (ft)), long, and are larger than males (King 1986, p. 762). Newborn Lake Erie Watersnakes are the size of a pencil, and are born during late summer or early fall (King 1986, p. 764).

Lake Erie Watersnakes are distinct from Northern Watersnakes in their reduced or absent banding patterns (Conant and Clay 1937, pp. 2-5; Camin and Ehrlich 1958, p. 504; King 1987, pp. 243-244), use of substrates dominated by limestone or dolomite (Conant and Clay 1937, p. 6; King 1986, p.760) , diet composition (Hamilton 1951, p. 64-65), larger body size (King 1989, pp. 85-86),

lower growth rates (King 1986, p. 770), and shorter tails (King 1986, p. 768).

Lake Erie Watersnake summer habitat is composed of rocky shorelines with limestone or dolomite shelves, ledges, or boulders for sunning and shelter. Shelter occurs in the form of loose rocks, piled rocks, or shelves and ledges with cracks, crevices, and nearby vegetation. Rip-rap erosion control, armor stone, and docks incorporating a stone crib structure often serve as summer habitat for the snake. Lake Erie Watersnakes typically forage for fish and amphibians in Lake Erie, and research indicates that more than 90 percent of their current diet is composed of the nonnative, invasive fish round goby (*Neogobius melanostomus*) (King *et al.* 2006b, p. 110). Jones *et al.* (2009, p. 441) report that the mean foraging distance from shore was 85 m (279 ft) and the average water depth of the foraging locations was 3.32 m (10.9 ft). During the summer, 75 percent of Lake Erie Watersnakes are found within 13 m (42.7 ft) of the water's edge (King 2003, p.4). King (2003, p. 4) identified that 75 percent of Lake Erie Watersnakes used 437 m (1433 ft) of shoreline or less as a home range. In the winter, Lake Erie Watersnakes hibernate below the frost level, in cracks or crevices in the bedrock, interstitial spaces of rocky substrates, tree roots, building foundations, and other similar natural and human-made structures. Seventy-five percent of Lake Erie Watersnakes hibernate within 69 m (226 ft) of the water's edge (King 2003, p. 4). Individual snakes often demonstrate site fidelity, returning to the same shoreline area and the same or nearby hibernacula in successive years (King 2003, pp. 4, 11-17).

Additional information on the Lake Erie Watersnake's life history and biology can be found in the final listing rule (64 FR 47126; August 30, 1999) and the Lake Erie Watersnake (*Nerodia sipedon insularum*) Recovery Plan (Service 2003a, pp. 6-11).

Previous Federal Actions

We classified the distinct population segment (DPS) of the subspecies, Lake Erie watersnake, that occurs on the U.S. offshore islands of western Lake Erie as a threatened species on August 30, 1999 (64 FR 47126) under the Endangered Species Act of 1973, as amended (Act). On September 25, 2003, we announced the availability of a final recovery plan for the Lake Erie Watersnake (68 FR 55411). In the recovery plan (Service 2003a, p. G-19) we describe a revision to the common name from "Lake Erie water snake" to "Lake Erie Watersnake" per the peer-reviewed naming convention outlined in "Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding" (most recent version, Crother 2008, p. 58). Subsequently, we refer to the subspecies as "Lake Erie Watersnake" in this and future documents. On April 27, 2005 the Service received a "60-Day Notice Letter of Intent to Sue for Violation of Section 4 of the Endangered Species Act for Failure to Designate Critical Habitat for the Lake Erie Water Snake" (*Wall and Fremont* v. *DOI*, 1:05-cv-01363-RCL). On May 2, 2006, a Settlement Agreement and Order was stipulated, which included conditions that would prompt the Service to issue a new critical habitat prudency determination. Briefly, the Settlement Agreement stipulated that a new critical habitat prudency determination would be issued by June 1, 2010, provided the Lake Erie Watersnake continues to be a listed species under the Act; or within 90 days of receiving population survey results indicating the snake is not attaining the delisting population goals identified in the recovery plan (Service 2003a). On April 22, 2008, we announced the initiation of a 5–year review for the Lake Erie Watersnake (73 FR 21643). The 5–year review recommended that the Lake Erie Watersnake be delisted due to recovery. Thus, we are submitting this proposal for public review and comment.

Recovery

Section 4(f) of the Act directs us to develop and implement recovery plans for listed species unless the Secretary determines that such a plan will not benefit the conservation of the species. The Service completed the final Lake Erie Watersnake Recovery Plan in 2003 (Service 2003a). We used the Recovery Plan to provide guidance to the Service, State of Ohio, and other partners on methods to minimize and reduce the threats to the Lake Erie Watersnake, to guide and prioritize research on the watersnake, and to provide measurable criteria that would help determine when the threats to the snake had been reduced so that it was no longer endangered or threatened and could be removed from the Federal List of Endangered and Threatened Wildlife (List).

Recovery Plans in general are not regulatory documents and are instead intended to provide a guide on how to achieve recovery. There are many paths to accomplishing recovery of a species in all or a significant portion of its range. The main goal is to remove the threats to a species, which may occur without meeting all recovery criteria contained in a recovery plan. For example, one or more criteria may have been exceeded while other criteria may not have been accomplished. In that instance, the Service may judge that, overall, the threats have been reduced sufficiently, and the species is robust enough, to reclassify the species from endangered to threatened or perhaps to delist the species. In other cases, recovery opportunities may be recognized that were not known at the time the recovery plan was finalized. Achievement of these opportunities may be counted as progress toward recovery in lieu of methods identified in the recovery plan. Likewise, we may learn information about the species that was not known at the time the recovery plan was finalized. The new information may change the extent that criteria need to be met for recognizing recovery of the species. Overall, recovery of a species is a dynamic process requiring adaptive management. Judging the degree of recovery of a species is also an adaptive management process that may, or may not, fully follow the guidance provided in a recovery plan.

The Lake Erie Watersnake Recovery Plan (Service 2003a, pp. 28-30) outlines three recovery criteria, each with two parts, to assist in determining when the snake has recovered to the point that the protections afforded by the Act are no longer needed. All three of the criteria in the Lake Erie Watersnake Recovery Plan have been fully met and, in most cases, substantially exceeded. Each criterion and its attainment are described fully below.

Criterion 1: Population Persistence

Criterion 1(a): Estimated population size reaches or exceeds 5,555 adult Lake Erie Watersnakes on the U.S. islands combined (Kelleys, South Bass, Middle Bass, North Bass, Rattlesnake, West Sister, Sugar, Green, Ballast, and Gibraltar) for a period of 6 or more consecutive years.

Researchers at Northern Illinois University (NIU) have led intensive annual Lake Erie Watersnake censuses since 2001 and have collected data to generate annual adult population estimates as recommended in the Lake Erie Watersnake Recovery Plan (Service 2003a, pp. 39-40). The methodology for conducting censuses and calculating the adult population estimates based on the census data is detailed in King *et al.* (2006a, pp. 88-92). Generally, population estimates are generated using multiple years of mark-recapture data, and applying closed- and open-population methods to analyze the data

(King *et al.* 2006a, pp. 88-92). The preferred and most accurate method for calculating population size, the Jolly-Seber method (Jolly 1965, Seber 1965), requires at least three census periods and does not provide an estimate for the first or last period. Thus, the most recent year for which Jolly-Seber population estimates were generated is 2008. To provide population estimates for 2009, the Lincoln-Petersen method (as modified by Bailey in Caughley 1977, p.142) or Schumacher's method (Caughley 1977, p. 145) or a relationship between population density and capture rate was used, depending on the number of within-year census events and captures at a given sampling location (King and Stanford 2010, p.3). As data are collected each year, previous years' estimates are refined and current year estimates are generated using the above methods.

King and Stanford (2010, p. 11) report the results of these annual adult Lake Erie Watersnake population estimates from the time period encompassing 2001 through 2009. These population estimates indicate that Criterion 1(a) has been fully achieved, and in recent years substantially exceeded, during the period 2001-2009 (see Table 1 below). Based on the most recent population estimates in King and Stanford (2010), this criterion's population goal of at least 5,555 adults was first achieved in 2002 when there were an estimated 6,200 adult watersnakes on the U.S. islands combined, and has remained well above that level for the last 8 years. While the adult population estimate for 2009 seems low compared to other recent years, this is simply a factor associated with the method used to calculate the adult population size for the most recent year's data. As noted above, the Jolly-Seber method cannot be used to generate current-year population estimates, so a different though less exact method is used, depending on the number of within-year census events and capture numbers. It is expected that with another year of census data, the refined population estimates for each island and for the total population for 2009 will be considerably larger and more accurate.

Even more enlightening than the adult population estimates is the calculation of realized population growth of adult Lake Erie Watersnakes since intensive monitoring began in 2001. King and Stanford (2009, p. 6) used the program MARK (White 2004, Cooch and White 2008) to model realized population growth using annual census data from 2001through 2008 at eight intensive study sites with the most complete capture histories. This model documented realized population growth of approximately 6 percent per year for the years 2001-2008, with 95 percent confidence limits of 2-10 percent, providing strong evidence of a minimum of 2 percent population growth per year across multiple sites (King and Stanford 2009, pp. 6-7). This indeed demonstrates that the adult Lake Erie Watersnake population has grown measurably since the time of listing, and validates the population estimates that also show increasing trends. Criterion 1a has been fully achieved.

TABLE 1. TOTAL ESTIMATED U.S. ADULT LAKE ERIE WATERSNAKE POPULATION SIZE, 2001-2009. ESTIMATES THAT EXCEED ISLAND-SPECIFIC AND OVERALL POPULATION SIZE GOALS SPECIFIED IN THE LAKE ERIE WATERSNAKE RECOVERY PLAN (SERVICE 2003A) ARE SHOWN IN **BOLD**. MODIFIED FROM KING AND STANFORD 2010, TABLE 4.

Year	Kelleys	South Bass	Middle Bass	North Bass	Small Islands*	Combined U.S. Islands
Recovery Goal	900	850	620	410	Not applicable	5555
2001	**1860**	**1560**	**770**	160	780	5130
2002	**2160**	**1410**	**1300**	**550**	780	**6200**
2003	**2270**	**1490**	**1920**	270	780	**6730**
2004	**2780**	**1580**	**1740**	**480**	1220	**7800**
2005	**2490**	**1580**	**3140**	**770**	920	**8900**
2006	**2820**	**2790**	**2960**	**1440**	1430	**11440**
2007	**2630**	**2110**	**3660**	**1010**	890	**10300**
2008	**3270**	**2270**	**2610**	**970**	2280	**11400**
2009	**2600**	**2220**	**1090**	**550**	800	**7260**

*See Criterion 1(b)

Criterion 1(b): Subpopulations on each of the five small U.S. islands capable of supporting Lake Erie Watersnakes year-round (Rattlesnake, Sugar, Green, Ballast, and Gibraltar) persist during the same 6-or-more-year-period as Criterion 1a, and estimated population size reaches or exceeds the population size stated below for each of the four largest islands simultaneously during the same 6-or-more-year-period as Criterion 1(a): Kelleys Island—minimum of 900 adults; South Bass Island—minimum of 850 adults;Middle Bass Island—minimum of 620 adults; and (iv) North Bass Island—minimum of 410 adults.

Populations of Lake Erie Watersnakes have been confirmed on the following small U.S. islands throughout the period of 2002-2008: Rattlesnake, Sugar, Green, Ballast, and Gibraltar (King and Stanford 2009, pp. 6, 16). Populations of Lake Erie Watersnakes have persisted on the small islands during the same 6–year period as Criterion 1(a).

As identified in Table 1 above, estimated population sizes for each of the four largest U.S. islands have exceeded their population size criteria for the 7 consecutive years between 2002 and 2008. This is the same consecutive 7–year period as Criterion 1(a), with only one exception—North Bass Island in 2003 (King 2008, pp. 5, 16). King (2008, p. 5) describes the

circumstances of the sampling on North Bass Island that year: "North Bass Island was surveyed just once in 2003 and weather conditions were poor (partly cloudy and cool) during this survey. As a result, capture rates, especially at the NE,E,SE Shore site, were low." King (2008, p. 5) goes on to say that the Lake Erie Watersnake adult population estimate for North Bass Island in 2003 is likely inaccurate because the population estimates for the years prior to and after the 2003 census substantially exceeded the population estimate for 2003, and because watersnakes require 3 to 4 years to reach adulthood. King (2008, p. 5) concludes that, "It is unlikely that these year-to-year differences in estimated population size (from 610 to 270 to 440) reflect true variation in population numbers. Instead, the low estimate for 2003 appears to reflect inadequate sampling in that year."

Based on the information above, it is reasonable to assume that North Bass Island has indeed met the population size criterion for 7 consecutive years, as have the other three largest U.S. islands. Therefore, Criterion 1(b) has been fully achieved.

Criterion 2: Habitat Protection and Management

Criterion 2(a): Sufficient summer and hibernation habitat protected in perpetuity and sustained in a manner suitable for the continued persistence of the Lake Erie Watersnake. Individual parcels will collectively encompass a total of 7.4 kilometers (km) (4.6 mi) of shoreline, and 0.51 km² (126 acres (ac)) of inland habitat lying within 69 m (226 ft) of the shoreline on U.S. islands in Lake Erie. To be included under this criterion, each parcel will have a written agreement, which may be represented by a conservation easement (such as is currently offered by the Ohio Department of Natural Resources (ODNR) and Lake Erie Islands Chapter of the Black Swamp Conservancy (LEIC-BSC)) or other habitat management plan that has been approved by the USFWS (such as the "Lake Erie Watersnake Habitat Management Planning" document for Middle Bass Island State Park). Individual parcels may be publicly or privately owned.

Criterion 2(b): Protected shoreline habitat and inland habitat within 69 m (226 ft) of the shoreline, as described in Criterion 2a, will be distributed among the four major islands as follows, with the remaining protected habitat occurring on any of the U.S. islands

(i) Kelleys Island—minimum 1.2 km (0.75 mi) shoreline, 0.083 km² (20.5 ac) inland;

(ii) South Bass Island—minimum 1.1 km (0.70 mi) shoreline, 0.078 km² (19.3 ac) inland;

(iii) Middle Bass Island—minimum 0.82 km (0.51 mi) shoreline, 0.057 km² (14.1 ac) inland; and

(iv) North Bass Island—minimum 0.54 km (0.34 mi) shoreline, 0.037 km² (9.1 ac) inland.

By working collaboratively with partners, primarily ODNR, LEIC-BSC, Western Reserve Land Conservancy (WRLC), Put-in-Bay Township Park District, and Cleveland Museum of Natural History (CMNH), we have ensured the permanent protection of 18.03 km (11.27 mi) of shoreline habitat and 0.79 km² (313.88 ac) of inland habitat within 69 m (226 ft) of shore (see Table 2 below). The total protected habitat indicated in Table 2 is more than double the goal established in Criterion 2 of the Recovery Plan. Further, as evidenced in Table 2, the goals for each of the four major islands have either been met or exceeded.

TABLE 2. LAKE ERIE WATERSNAKE PROTECTED HABITAT

Island	Property	Land within 69 m of shore		Length of shoreline		Partner
		(ac)	(km²)	(mi)	(km)	
Kelleys	Kelleys Island State Park; North Pond State Nature Preserve; Kelleys Island Alvar	36.90	0.149	1.09	1.74	ODNR
	Long Point Preserve	21.40	0.087	0.36	0.57	CMNH
	Schollenberger Easement	0.14	0.001	0.02	0.03	LEIC-BSC
subtotal		*58.44*	*0.237*	*1.47*	*2.34*	
South Bass	South Bass Island State Park; Oak Point State Park	12.90	0.052	0.50	0.80	ODNR
	Scheef East Point Nature Preserve	6.4	0.026	0.32	0.52	WRLC
subtotal		*19.30*	*0.078*	*0.82*	*1.32*	
Middle Bass	Middle Bass Island State Park; Kuehnle Wildlife Area	48.70	0.197	1.71	2.74	ODNR
	Petersen Woods	1.55	0.006	0.02	0.03	LEIC-BSC
	Lawrence Evans	0.75	0.003	0	0	LEIC-BSC
subtotal		*51.00*	*0.206*	*1.73*	*2.77*	
North Bass	North Bass Island State Park; Fox's Marsh Wildlife Area	168.80	0.683	6.19	9.90	ODNR
subtotal		*168.8*	*0.683*	*6.19*	*9.90*	
Green	Green Island Wildlife Area	16.34	0.066	1.06	1.70	ODNR
TOTAL		*313.88*	*1.270*	*11.27*	*18.03*	

While the Service's partners in establishing Lake Erie Watersnake protected habitat are all generally conservation organizations, the Service has ensured that some form of permanent protection is in place for each protected habitat. Each property that counts towards Criterion 2 is protected by one of the following methods, which have been reviewed and endorsed by the Service: A permanent conservation easement which specifically incorporates Lake Erie Watersnake habitat management and preservation; a Letter of Agreement between the landowner and the Service indicating that the habitat will be maintained in a natural habitat suitable for the Lake Erie Watersnake in perpetuity; a perpetual management plan to protect Lake Erie Watersnake habitat; or an Environmental Covenant and permanent deed restriction that supports conservation of the Lake Erie Watersnake and its habitat in perpetuity. For example, ODNR's properties compose 90 percent of the total protected inland habitat. In 2005, ODNR submitted to the Service the "Lake Erie Water Snake Habitat Management Planning; Lake Erie Island Properties Owned or Managed by the Ohio Department of Natural Resources" (ODNR 2005, p. 1) document to qualify these properties as recovery habitat for the snake. This document identified specific management actions that will be undertaken on each island property to avoid injury and harm to the Lake Erie Watersnake during typical land management activities such as mowing, tree removal, maintenance and repair of structures, and vegetation control (ODNR 2005, pp. 3-6). Some of these management actions include: avoiding excavation during the Lake Erie Watersnake hibernation season; removing only the above-ground portion of a tree while maintaining the root mass for hibernation habitat; and establishing "no mow buffer zones" within 21 m (70 ft) of the water's edge between the shoreline and more manicured lawn areas to provide summer habitat for the Lake Erie Watersnakes (ODNR 2005, pp. 3-5). Further, the document specifies proactive measures ODNR will implement to enhance watersnake habitat, conduct outreach activities regarding the watersnake, and promote research on the watersnake (ONDR 2005, p. 6). Finally, the document specifies that ODNR will initiate early consultation with the Service prior to submitting an application to a Federal agency to determine how to avoid and minimize impacts to the Lake Erie Watersnake (ODNR 2005, p. 2). The ODNR plans to continue this early coordination, as well as implementing all portions of the Lake Erie Watersnake habitat management plan, after delisting (ODNR 2010, pers. comm.).

Another example of protected habitat is property protected by a conservation easement held by the Lake Erie Islands Chapter of the Black Swamp Conservancy. These easements include as their purpose statement, "The purpose of this Conservation Easement is to permanently maintain the Protected Property as Lake Erie Water Snake habitat as a scenic area of the Lake Erie Island Region and to prevent or remedy any subsequent activity or use that significantly impairs or interferes with this purpose" (Black Swamp Conservancy 2003, p. 2). The easement includes a number of prohibited uses designed to maintain the natural habitat of the property for the Lake Erie Watersnake (Black Swamp Conservancy 2003, pp. 2-3). Finally, the easement includes management guidelines for allowable activities that avoid disturbance of Lake Erie Watersnakes and their habitat (Black Swamp Conservancy 2003, pp. 13-14).

Both ODNR's Habitat Management Plan and Black Swamp Conservancy's Conservation Easement program provide examples of mechanisms for protecting Lake Erie Watersnake habitat, while allowing for reasonable actions such as vegetation maintenance. All areas that qualify as protected habitat for the Lake Erie Watersnake have similar management plans or similar documents, and all of these properties are overseen in some way by ODNR or another conservation-based organization. Based on this information, Criteria 2(a) and 2(b) have been fully achieved.

Criterion 3: Reduction of Human-Induced Mortality

Criterion 3(a): Objective analysis of public attitude on the islands indicates that intentional human persecution is no longer a significant threat to the continued existence of the snake.

As indicated in the final listing rule for the Lake Erie Watersnake (64 FR 47131; August 30, 1999), "persecution by humans is the most significant and well documented factor in the decline of Lake Erie Watersnakes." Lake Erie Watersnake adults are large, readily encountered along the shoreline and in nearshore waters, and cluster in groups during portions of the year. Though not venomous, Lake Erie Watersnakes will bite and secrete musk if handled, and sometimes will not flee when approached by humans. These Lake Erie Watersnake characteristics, coupled with a general fear of snakes among a broad sector of the human population, may have contributed to an increased desire to eliminate them within the island environment, compared to other areas and other species of snake. Therefore the recovery strategy for the watersnake focused heavily on public outreach and education, in an attempt to change the negative perception and hostile behavior of some island residents and visitors towards the watersnake. Public outreach focused on several basic messages: Lake Erie Watersnakes are not venomous, Lake Erie Watersnakes are a natural part of the island environment, and Lake Erie Watersnakes should not be harmed or killed. Several public opinion surveys were recently conducted to gauge island landowner perception of the Lake Erie Watersnake, and past, current, and future behavior towards the snake. Information on public opinion was derived primarily from formal surveys conducted by Wayne Wilkinson, Northern Illinois University (NIU) (Wilkinson 2008) and Andrea Olive (Olive 2008).

The Lake Erie Watersnakes Public Opinion Survey (Wilkinson 2008) of 754 randomly selected island residents within the range of the Lake Erie Watersnake resulted in 348 responses from residents of five U.S. islands, one response from one Canadian island resident, and one response from one non-island resident (Wilkinson 2008, p. 7). Nineteen questions were asked to gauge the general knowledge, perceptions, and threat of human persecution among island residents. Respondents were also given the opportunity to provide written comments. Several of the survey questions were identical to survey questions asked of island residents in a 1999 public opinion survey (Service 1999), and answers were compared to determine changes over time.

Responses from the 2008 survey indicate that 99 percent of respondents are aware that the Lake Erie Watersnake occurs on the island, and that 94 percent of respondents are aware that it is a protected animal (Wilkinson 2008, pp. 1, 5). Eighty-three percent of respondents indicate that their knowledge of Lake Erie Watersnake has increased since listing in 1999 (Wilkinson 2008, pp. 5). Respondents cite a large variety of methods by which they have become more familiar with the snake, including: the Service and ODNR's biannual newsletter "LEWS News"; the "Island Snake Lady" (an NIU researcher funded by ODNR and the Service), and; various media sources

(Wilkinson 2008, pp. 2-4). Generally, these data indicate that Federal, State, and nongovernmental organizations' outreach and education campaigns are reaching the vast majority of island residents, and are helping to increase their access to information about the watersnake.

Additionally, Wilkinson (2008, p. 1) reports that 66 percent of respondents indicated that their attitude toward the watersnake is generally positive or neutral, while 34 percent indicate that their attitude is generally negative. While it is apparent that not all residents feel positively toward the snake, it is very notable that, despite human persecution being the most significant factor in the decline of the Lake Erie Watersnake, only about 4 percent of respondents indicated they had knowingly killed a watersnake since the time of listing, and only about 14 percent of respondents said they would knowingly kill a watersnake if it was no longer protected by State or Federal laws (Wilkinson 2008, p. 6). We interpret these responses to indicate that, while the watersnake will still face some human persecution, the vast majority of islanders would not resort to lethal means if they encountered watersnakes on their property.

Similarly, in 2007, Olive (2008, p. 83) randomly selected and interviewed 44 individual property owners from Middle Bass Island regarding the Endangered Species Act and the Lake Erie Watersnake. Of those interviewed, 7 percent admitted to killing a snake and 18 percent admitted they might kill a snake while it is listed (Olive 2008, pp. 112-113, 153).

Despite the admitted intentional mortality documented by both Wilkinson (2008, p. 6) and Olive (2008, pp. 112-113, 153) adult Lake Erie Watersnake populations have increased substantially since the time of listing, both across the U.S. range and on each large island (King and Stanford 2010, p. 11; King and Stanford 2009, pp. 6-7). This indicates that the adult Lake Erie Watersnake population can tolerate some degree of intentional mortality of individual snakes and still persist at a recovery level.

Wilkinson's 2008 public opinion survey found that 31 percent of respondents' attitudes toward Lake Erie Watersnakes have become more negative since listing, 30 percent have become more positive, and 39 percent have not changed (Wilkinson 2008, p1). While this survey did not attribute reasons to the change in attitude, 69 out of 168 (41 percent) of the optional comments on Wilkinson's (2008, pp. 8-13) survey response form indicated the belief that there are now too many snakes, that the snakes are becoming nuisances due to their numbers and their habits of clustering along the shoreline, or that the snakes should no longer be protected.

Public opinion of the Lake Erie Watersnake varies widely among those who support it, those who have no opinion, and those that dislike or fear the snake. Outreach efforts have reached nearly all island residents, increasing access to information about the Lake Erie Watersnake, including non-lethal ways to address nuisance snakes. Opinion surveys seem to indicate that most people do not now and will not in the future kill Lake Erie Watersnakes, however many people indicate that the sheer number of snakes along the shoreline has become a nuisance, and this may contribute to negative feelings towards the snake. As Lake Erie Watersnake numbers have rebounded, and a significant amount of habitat has now been permanently protected to support Lake Erie Watersnakes, the Lake Erie Watersnake population can withstand a limited amount of intentional mortality. While the threat of intentional mortality likely can never be completely eliminated, results of public opinion surveys indicate that the number of mortalities anticipated from intentional human persecution on its own and with other residual threats is not likely to cause the subspecies to become threatened or endangered again within the foreseeable future.

Continued outreach regarding the Lake Erie Watersnake's role in the island ecosystem is important, and this is proposed to continue through various partners post-delisting. Proposed on-going outreach activities are addressed in the Summary of Factors Affecting the Species - Factor E, below. Public opinion will be monitored post-delisting to ensure this remnant threat is not affecting the Lake Erie Watersnake population as a whole. Therefore, Criterion 3(a) has been fully achieved.

Criterion 3(b): Accidental human-induced mortality, such as occurs from roadkill and fishing, has been reduced to the maximum extent practicable, and no longer represents a significant threat to the population.

Several sources of accidental human-induced mortality have been examined to determine to what degree they may be contributing to overall mortality of Lake Erie Watersnakes, and if they are a significant threat to the population.

A survey of registered boaters in the Lake Erie island region was conducted to determine how many members of the Lake Erie Island boating and fishing community had direct encounters with snakes, and to characterize the responses from these encounters (Stanford 2004). Of 1,437 surveys mailed out, 468 were completed and returned (Stanford 2004, p. 1). An additional 21 surveys were completed voluntarily by individuals who picked them up at various outreach events that occurred in the vicinity of the islands, for a total of 489 survey responses (Stanford 2004, p. 1). Of the respondents, 118 reported having encountered a watersnake on their boat, and not a single encounter resulted in a boater or angler killing a snake (Stanford 2004, p. 2). These data suggest that encounters between boaters and watersnakes typically do not result in mortality. Only 13 of the 489 respondents (less than 3 percent) indicated that they have ever caught a snake by hook and line while fishing with both live and artificial baits, and from both boat and shore, though no information was provided regarding snake mortality during these incidents (Stanford 2004, p. 2). It is clear that bycatch of Lake Erie Watersnakes due to hook and line fishing incidents is very rare, and does not pose a significant threat to the population. Despite the rarity of mortality during fishing and boating, approximately 25 percent of boaters and anglers near the Lake Erie islands may encounter a Lake Erie Watersnake (Stanford 2004, p. 2). ODNR Division of Wildlife developed pamphlets entitled, "Lake Erie Watersnake-Make your Boating Experience More Pleasant" to aid anglers and boaters in deterring Lake Erie Watersnakes from entering their boats, and to recommend non-lethal methods to remove snakes from boats (ODNR 2003). These pamphlets are available online (*http://respectthesnake.com*) and at a number of state parks, boat launches, and marinas in the island region.

To address the effect roadkill mortality may have on the Lake Erie Watersnake population a survey of roadkill mortality was conducted on the four large U.S. islands between June 26 and July 15, 2005 (King 2007, pp. 5-6). This survey found a total of 71 roadkill snakes, including 45 roadkill Lake Erie Watersnakes (King 2007, p.5). King (2007, p. 6) states, "Among watersnakes, 38 were neonates, 5 were juveniles, and 2 were adults. These results suggest that adult Lake Erie Watersnake roadkill mortality is relatively low (Brown and Weatherhead 1999). Available data on watersnake mortality suggest that survivorship of neonates is low. Thus, roadkill mortality of this age-class likely has little impact on watersnake

population trends." Therefore, the number of mortalities anticipated from accidental human-induced mortality due to roadkill events alone or coupled with other residual threats is not likely to cause the subspecies to become threatened or endangered again within the foreseeable future.

The Lake Erie Watersnake Recovery Plan (Service 2003a, pp. 18, 38, 49, 57) recommended that additional studies be conducted to document the impact that invasive species, including the round goby, may have on the watersnake. King *et al.* (2006b, p. 110) found that since the appearance of round goby in the Great Lakes in the early 1990's, Lake Erie Watersnake diets have shifted from a diet of native fishes and amphibians to a diet composed of more than 90 percent round goby. This dietary shift corresponds to increased watersnake growth rates, increased body size, and increase in fecundity, with female watersnakes producing on average 25 percent more offspring post-invasion (King *et al.* 2008, pp.155, 158; King *et al.* 2006b, pp.111-113). King *et al.* (2008, p. 159) suggest that, "resource availability may have contributed to population declines in Lake Erie Watersnakes during the mid- to late-1900s...While habitat loss and human-caused mortality are likely contributors to past watersnake population declines, the possibility exists that a reduction in benthic [lake bottom] fish biomass, resulting in reduced watersnake fecundity, was also a factor. Unfortunately, quantitative data on long-term temporal trends in benthic fish biomass are lacking." If it is correct that limited foraging opportunities were a cause of the watersnake's population declines, the overabundance of the round goby within the island region of western Lake Erie will likely provide a significant prey source into the foreseeable future, negating any threats from limited prey availability.

The Lake Erie Watersnake Recovery Plan (Service 2003a, pp. 18-19, 38, 49, 57) also recommended that additional studies be conducted to document the impact that contaminants may have on the watersnake. In particular, this research became a high priority when it became apparent that the watersnake's diet switched from native fish and amphibians to almost exclusively round goby, which prey extensively on zebra mussels (*Dreissena polymorpha*) and quagga mussels (*Dreissena bugensis*). Potential biomagnification of contaminants through this change in food web was thought to be a possible threat to the watersnake. Polychlorinated biphenyls (PCBs) have been documented in Lake Erie Watersnakes in fairly high levels (113 micrograms per gram (μg/g) (Bishop and Rouse 2006, pp. 454, 456) and 167 μg/g (Bishop and Rouse 2000, pp. 500-501)). Recent research compared the levels of contaminants in Lake Erie Watersnakes pre- and post-goby invasion and found "a marginal increase in hexachlorobenzene levels, and a significant decline in dieldrin, oxychlordane, and heptachlor epoxide," and found that, "sum PCBs and p,p'-DDE remained stable in the watersnakes after the invasion of round goby...suggesting that although the dietary switch to round gobies meant consumption of a more contaminated diet, their diet remained at the same trophic position [place in the food chain]" (Fernie *et al.* 2008 p. 344). Fernie *et al.* (2008, pp. 344, 349-350) did recommend additional studies to determine if these contaminants affect reproductive and physiological parameters in Lake Erie Watersnakes; however, as Bishop and Rouse (2006, pp. 452, 454, 456) did not correlate high levels of PCBs with embryonic mortality or number of embryos produced by female watersnakes, no additional research on contaminants is deemed necessary at this time.

Research confirms that the dietary switch from native fish and amphibians to round gobies has not resulted in significant increases in contaminant loads in Lake Erie Watersnakes. Additionally, while relatively high levels of PCBs were detected in watersnakes in the past, these levels did not correspond with embryonic survivorship. Lake Erie Watersnake population numbers continue to increase despite relatively stable exposure to contaminants over the past 18 years of study, and therefore we conclude at this time and into the foreseeable future that contaminants do not pose a significant threat to the Lake Erie Watersnake.

As described further under Summary of Factors Affecting the Species - Factor A and Factor E below, intensive public outreach has occurred to increase awareness of island residents and visitors of the presence of the Lake Erie Watersnake on the Lake Erie islands and in nearby waters, and to reduce both accidental and intentional mortality of Lake Erie Watersnakes. To reduce accidental mortality from typical land management activities such as lawn mowing and tree clearing, and to guide residents in an appropriate way to address Lake Erie Watersnakes that are found in garages, pools, lawns, patios, basements, and other similar areas, various outreach documents have been developed by both the Service and ODNR. The Service's "Lake Erie Watersnake Management Guidelines for Construction, Development, and Land Management Activities" (Service 2009, Service 2003b) provide guidance on how to avoid take during typical land-management activities, while ODNR's "A Lakeshore Property Owner's Guide to Living with Lake Erie Watersnakes" (ODNR 2006) provides guidance on dealing with nuisance snakes in human living areas in a non-lethal way. These documents are available on the internet (*http://respectthesnake.com*) and at various locations on the islands.

In summary, we have assessed the impact of accidental human-induced mortality on the adult Lake Erie Watersnake population. We have used an intensive public outreach campaign to increase awareness of residents and visitors to the presence and protected status of the Lake Erie Watersnake, and have provided guidance and tools for minimizing human-snake encounters and addressing snakes encountered in boats, homes, yards, and other human-inhabited areas in a non-lethal way. We have determined that accidental human-induced mortality, such as occurs from boating, fishing, and roadkill events, does not pose a substantial threat to the adult Lake Erie Watersnake population, and therefore does not warrant further action. Further, invasive species and contaminants do not appear to significantly threaten the adult Lake Erie Watersnake population. We assert that Criterion 3(b) has been achieved.

Summary of Factors Affecting the Species

Section 4 of the Act and its implementing regulations (50 CFR part 424) set forth the procedures for listing species, reclassifying species, or removing species from listed status. "Species" is defined by the Act as including any species or subspecies of fish or wildlife or plants, and any distinct vertebrate population segment of fish or wildlife that interbreeds when mature (16 U.S.C. 1532(16)). Once the "species" is identified, we then evaluate whether that species may be endangered or threatened because of one or more of the five factors described in section 4(a)(1) of the Act. We must consider these same five factors in delisting a species. We may delist a species according to 50 CFR 424.11(d) if the best available scientific and commercial data indicate that the species is neither endangered nor threatened because (1) The species is extinct, (2) the species has recovered and is no longer endangered or threatened, or (3) the original scientific data used at the time the species was classified were in error.

A recovered species is one that no longer meets the Act's definition of threatened or endangered. The analysis for a delisting due to recovery must be based on the five factors outlined in section 4(a)(1) of the Act. This analysis must include an evaluation of threats that existed at the time of listing, those that currently exist, and those that could potentially affect the species once the protections of the Act are removed.

In the context of the Act, the term "threatened species" means any species or subspecies or, for vertebrates, Distinct Population Segment (DPS) that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The term "endangered species" means any species that is in danger of extinction throughout all or a significant portion of its range. The Act does not define the term "foreseeable future." For the purpose of this proposal, we define the "foreseeable future" to be the extent to which, given the amount and substance of available data, we can anticipate events or effects, or reliably extrapolate threat trends, such that we reasonably believe that reliable predictions can be made concerning the future as it relates to the status of the Lake Erie Watersnake.

The following analysis examines all five factors currently affecting, or that are likely to affect, the Lake Erie Watersnake within the foreseeable future.

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

The islands on which the Lake Erie Watersnake occurs provide seasonal residences and vacation areas to large numbers of people during the summer months. Further, the western Lake Erie basin is widely known for recreational and fishing opportunities, and is a regional destination area, particularly during the summer months. It is therefore not surprising that most of the islands have faced and continue to face development pressure (Seymour 2009, pers. comm.).

Prior to listing, three of the large islands (Kelleys, Middle Bass, and South Bass) were fairly well developed with residences and small-scale commercial businesses, with scattered natural areas throughout. North Bass Island supported a few residences, but was primarily agricultural, and dedicated to viticulture (vineyards). The small islands are mostly privately owned, and typically support a few residences interspersed with natural areas. Development activities on the islands since the Lake Erie Watersnake was listed in 1999 include the following types of projects: residential construction on three of the four large islands; hotel and motel structures on two of the large islands; dock construction and rehabilitation on most of the islands; shoreline stabilization on most of the islands; small and large marina construction and rehabilitation on several of the islands; utility line installation on three of the large islands; road rehabilitation projects on two of the large islands; wastewater treatment facilities on several of the islands; beach nourishment projects on several of the islands; small-scale commercial development on several of the large islands; and airport upgrades on several of the islands (Seymour 2009, pers. comm.). Many of these activities occur on or near the shoreline, where Lake Erie Watersnakes spend much of their time. In some cases, development activities can result in habitat loss or degradation, for example, when a building is constructed along a segment of shoreline that previously supported natural vegetation, or when a vertical wall is constructed along the shoreline to protect against erosion. However, some types of development actually provide suitable Lake Erie Watersnake habitat. For example, Lake Erie Watersnakes will readily use rip-rap or armor stone erosion control structures and crib docks that incorporate stone fill for summer habitat.

Destruction or Modification of Summer Habitat

As described in the **Background** section, Lake Erie Watersnake summer habitat consists of the rocky and vegetated island shorelines and the adjacent nearshore waters of Lake Erie. Seventy-five percent of adult Lake Erie Watersnakes are found within 13 m (42.7 ft) of the water's edge during the summer (King 2003, p. 4). Destruction or modification of summer habitat typically occurs due to residential or, less often, commercial development, installation or modification of roadways and associated utilities, shoreline erosion control projects, dock construction or modification, and dredging activities. These activities may result in loss or degradation of rocky shorelines, vegetation, and nearshore aquatic habitats, which the snakes use for basking, resting, cover, mating, and foraging.

Lake Erie Watersnakes are affected by summer habitat destruction and modification in a variety of ways, depending on the method, design, and timing of the specific project. Lake Erie Watersnakes are resilient to many modifications to summer habitat, such as installation of rip-rap erosion control structures and crib docks. Repeated observations over multiple years document that individual Lake Erie Watersnakes displaced during construction activities will return to the same area once construction is complete, so long as rocky or vegetated shoreline habitat is present (Stanford 2009, pers. comm.). Further, artificial habitat such as crib docks and rip-rap erosion control are known to support large number of Lake Erie Watersnakes during the summer season on all of the large islands, and may actually provide habitat where natural rocky shoreline habitat was previously limited. Projects that impact summer habitat, but occur during the winter season, may have no observable impacts on the Lake Erie Watersnake, while projects that impact summer habitat during the summer may cause temporary displacement of Lake Erie Watersnakes from all or a portion of their shoreline home range. The vast majority of the islands' shorelines are either composed of small private lots or larger parcels (typically ODNR properties) that are protected Lake Erie Watersnake habitat. In most cases, projects that impact Lake Erie Watersnake summer habitat occur on small private parcels, and therefore impacts will be limited to only a small portion of an individual snake's home range.

There are only a few activities that may permanently displace Lake Erie Watersnakes from their summer habitat, including installation of vertical steel or concrete walls along the shoreline or over the sides of existing rock-filled crib docks. In instances where homes, businesses, roads, or other similar structures are built close to the shoreline, the presence of manicured lawns and shorelines may degrade summer habitat through loss of cover, though Lake Erie Watersnakes are often encountered basking in grassy areas near the shoreline, despite the presence of homes or roads. While Lake Erie Watersnakes may use grassy areas near shorelines and roads for basking, this habitat is not ideal because snakes are highly visible and may be more susceptible to predation or human persecution, and less cover is generally available in these areas. Further, maintenance activities such as mowing may kill or injure snakes that use maintained grass areas. Finally, snakes basking along road edges may be more susceptible to road kill than snakes basking near natural shorelines. Threats such as roadkill and human persecution are addressed under Factor E below.

Impacts to foraging habitat (Lake Erie) are typically limited to fill placement

for erosion control, docks, or navigation structures, or dredging to facilitate navigation. All impacts to foraging habitat are regulated by the U.S. Army Corps of Engineers (Corps) through section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act (see Factor D). Projects such as these typically cover only a small geographic area, and are of limited duration. Impacts to the Lake Erie Watersnake from these activities may include a limited amount of foraging habitat loss due to placement of fill within Lake Erie, degradation of foraging habitat due to short-term turbidity, and temporary displacement from foraging areas where construction activities are occurring. While watersnakes may be temporarily displaced from foraging habitat during construction, on repeated occasions over multiple years, individual Lake Erie Watersnakes have been documented recolonizing disturbed foraging areas shortly after construction activities are complete (Stanford 2009, pers. comm.). As noted above, the primary prey of Lake Erie Watersnakes is round goby, and these fish are superabundant in the island region (King *et al.* 2006b, p. 110). Foraging habitat and prey do not appear to be a limiting factor for Lake Erie Watersnakes, and therefore limited construction activities within foraging habitat are not anticipated to have significant impacts on Lake Erie Watersnakes.

Prior to listing, summer habitat modification included the activities described above, but of particular concern was the proliferation of sheet steel docks and vertical concrete and steel shoreline walls. Development of homes, businesses, and roads along the island shorelines may have degraded natural watersnake habitat to some degree, but as described above, Lake Erie Watersnakes appear to be fairly resilient to the presence of these types of structures, as long as rocky or vegetated shorelines persist once construction is complete.

Since the time of listing, most destruction and modification of Lake Erie Watersnake summer habitat has been subject to consultation under section 7 of the Act through the issuance of Corps permits under section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act (see Factor D). These laws provide the Service the opportunity to review and comment on all projects affecting Lake Erie Watersnake foraging habitat and many projects affecting shoreline habitat. Under these authorities, the Service has consistently recommended installation of rip-rap erosion control structures and crib docks in lieu of vertical concrete or sheet steel structures, seasonal timeframes for construction activities if appropriate, educational signage, and other appropriate avoidance and minimization measures. This consultation has reduced shoreline habitat degradation substantially, and has resulted in the creation of artificial shoreline habitat for Lake Erie Watersnakes on many islands.

We anticipate that similar projects impacting the islands' shorelines and the Lake Erie Watersnake's summer habitat will continue into the foreseeable future. As noted above, the vast majority of these projects are regulated by section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act, and as such, the Service will still have the opportunity to review and comment on these Corps projects via the Public Notice process. The Service will continue recommending rock structures as opposed to vertical structures on these types of projects, under the authority of the Fish and Wildlife Coordination Act, as rock structures are beneficial not only to snakes, but to fish and other aquatic species as well. We anticipate that construction of shoreline structures beneficial to Lake Erie Watersnakes will continue into the foreseeable future.

The destruction or modification of summer habitat may temporarily displace individual watersnakes, but these impacts do not affect the population as a whole. Shoreline habitat loss has been minimized while the species has been listed and is expected to remain minimal within the foreseeable future due to coordination and consultation with the Corps under section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act, and use of snake-friendly designs such as rip-rap and crib docks. Lake Erie Watersnakes have been documented to readily use these structures for summer habitat. Further, while shoreline construction activities may temporarily displace Lake Erie Watersnakes from portions of summer habitat, they will readily recolonize these areas shortly after construction activities are complete, as long as rocky or vegetated shorelines still exist (Stanford 2009, pers. comm.). Destruction and modification of foraging habitat is typically limited in scope and duration, and does not appear to be a limiting factor for the watersnake. However, the Service plans to address potential impacts to summer habitat by use of voluntary guidelines and by the presence of permanently protected habitat for the Lake Erie Watersnake, both described further below.

Destruction or Modification of Hibernation Habitat

As described in the **Background** section, during winter (generally mid-September through mid-April) Lake Erie Watersnakes hibernate below the frost level, in cracks or crevices in the bedrock, interstitial spaces of rocky substrates, tree roots, building foundations, and other similar natural and human-made structures (King 2003, pp. 5, 11-18). Seventy-five percent of Lake Erie Watersnakes hibernate within 69 m (226 ft) of the water's edge (King 2003, p. 4). Individual snakes often demonstrate site fidelity, returning to the same shoreline area and the same or nearby hibernacula in successive years (King 2003, pp. 4, 11-17).

Destruction or modification of hibernation habitat typically occurs due to residential or less often, commercial development, installation or modification of roadways or utilities, removal of tree roots, agriculture, and other excavation activities in areas within approximately 69 m (226 ft) of the shoreline. These activities may result in excavation, filling, or general disturbance of the rock, soil, root or other substrates within which Lake Erie Watersnakes hibernate.

Lake Erie Watersnakes are affected by hibernation habitat destruction and modification in a variety of ways, depending on the extent and timing of the specific project. Destruction or modification of hibernation habitat during the winter when Lake Erie Watersnakes are hibernating will likely result in death of hibernating snakes due to exposure, as well as the loss of the hibernacula for future generations of snakes. Destruction or modification of hibernation habitat during the summer when Lake Erie Watersnakes are not hibernating may result in temporary or permanent displacement from the hibernation area, and may force the snakes to find alternate hibernation sites. Though Lake Erie Watersnakes often demonstrate hibernacula fidelity, individual snakes have survived the winter when accidentally relocated to areas outside of their home range (King and Stanford 2009, p. 8), and when documented moving between islands (King 2002, p. 4), indicating that they are capable of finding new hibernation sites when previous sites are inaccessible. While this indicates that some Lake Erie Watersnakes are able to locate suitable alternate hibernacula, it is also likely that some Lake Erie Watersnakes are unable to locate suitable alternate hibernacula and die

from exposure or predation. As Lake Erie Watersnakes appear to use a variety of substrates and materials as hibernation habitat, and hibernation habitat sufficient to support approximately 50 percent of the adult Lake Erie Watersnake population is now protected, it is unlikely that the presence of suitable hibernation habitat is a limiting factor for the snake. It is more likely that loss of hibernation habitat during the winter when watersnakes are using it is problematic due to the accompanying mortality.

Prior to the Watersnake's 1999 listing, three of the four large islands were subject to substantial residential and commercial development. North Bass Island, while not subject to substantial development, was intensively farmed for grapes. Destruction and modification of hibernation habitat for development and agricultural activities likely occurred on a regular basis throughout the year. During portions of the Watersnake's hibernation season, the lake and ground are frozen and snow-covered, limiting access to construction vehicles and likely precluding some, but not all, ground-disturbing activities. Therefore, it is likely that Lake Erie Watersnakes were injured or killed during excavation or filling activities within hibernation habitat that occurred during the hibernation season. It is also likely that Lake Erie Watersnakes were displaced from their hibernation habitat when excavation or filling of hibernacula occurred during the summer months.

Since listing, many excavation or filling activities within proximity to the shoreline have been coordinated with the Service to determine if the activity would result in take of Lake Erie Watersnakes or to determine if avoidance or minimization measures were warranted. Some projects involving small areas of excavation, excavation of topsoil only, or excavation far inland from the shoreline were completed during the summer months and were not anticipated to cause direct mortality or substantial displacement of Lake Erie Watersnakes. Other projects that resulted in substantial excavation or fill within proximity to the shoreline were anticipated to destroy or modify hibernacula and cause take of Lake Erie Watersnakes, and for these projects, formal consultation under section 7 of the Act or the issuance of a section 10(a)(1)(B) permit under the Act occurred. During the 11–year period during which Lake Erie Watersnakes have been listed, only five projects were anticipated to cause loss of hibernation habitat and take of Lake Erie Watersnakes. So while development is fairly evenly spread across three of the large islands, most projects reviewed since the Watersnake's listing did not cause loss of hibernation habitat.

We anticipate that within the foreseeable future, loss of Lake Erie Watersnake hibernation habitat will likely proceed at approximately the same rate as within the past 11 years. We anticipate that approximately one large-scale development every 2.5 years will cause loss of Lake Erie Watersnake hibernation habitat (Seymour 2009, pers. comm.). The presence of hibernation habitat is not likely a limiting factor for the subspecies; however to limit mortality of watersnakes, it is important that large-scale excavation or filling activities within approximately 69 m (226 ft) of the shoreline do not occur during the winter hibernation season. Once the species is delisted, there will be no requirement to consult with the Service on activities that may affect hibernation habitat, nor is there a separate Federal nexus that would trigger Service review of the project as is the case with projects that may affect summer habitat. The Service has addressed this gap in hibernation habitat protection and management by the presence of permanently protected habitat for the Lake Erie Watersnake, and by use of voluntary guidelines, both described further below.

The destruction or modification of hibernation habitat may displace individual watersnakes and result in minimal mortality, but these impacts do not affect the population as a whole. Hibernation habitat loss during listing was minimal, and within the foreseeable future is likely to continue to be minimal, based on recent trends (Seymour 2009, pers. comm.). Lake Erie Watersnakes have recently been documented to survive winters despite their former hibernacula being inaccessible, indicating they are capable of finding alternate hibernacula if historical hibernacula are lost. The potential loss of some hibernation habitat due to development post-delisting will be alleviated by the presence of permanently protected habitat on each of the large islands, described further below.

Protected Habitat

While it is true that Lake Erie Watersnakes are fairly resilient to some habitat modifications and persist along and within developed areas, the Service recognizes that it is important to also have portions of habitat that are permanently protected and managed to benefit the Lake Erie Watersnake, and which will provide a substantial amount of suitable summer and hibernation habitat for the snake in the foreseeable future. The Lake Erie Watersnake Recovery Plan called for the permanent protection and management of summer and hibernation habitat sufficient to support 20 percent of the recovery population goal of 5,555 adult Lake Erie Watersnakes (Service 2003a, p.34). This habitat must encompass a total of 7.4 km (4.6 mi) of shoreline, and 0.51 km^2 (126 ac) of inland habitat lying within 69 m (226 ft) of the shoreline on U.S. islands in Lake Erie (Service 2003a, p. 29). Additionally, this habitat must be distributed among the large U.S. islands as described below to support multiple subpopulations throughout the range of the subspecies: Kelleys Island—1.2 km (0.75 mi) shoreline, 0.083 km^2 (20.5 ac) inland; South Bass Island—1.1 km (0.70 mi) shoreline, 0.078 km^2 (19.3 ac) inland; Middle Bass Island—0.82 km (0.51 mi) shoreline, 0.057 km^2 (14.1 ac) inland; and North Bass Island—0.54 km (0.34 mi) shoreline, 0.037 km^2 (9.1 ac) inland (Service 2003a, p. 29). The remaining protected habitat may occur on any of the U.S. islands. To be included as protected habitat, each parcel will have a written agreement, which may be represented by a conservation easement or other habitat management plan that has been approved by the USFWS (Service 2003a, p. 29) and protects Lake Erie Watersnake habitat in perpetuity.

As discussed in the **Recovery** section, by working collaboratively with partners, primarily ODNR, LEIC-BSC, Western Reserve Land Conservancy, Put-in-Bay Township Park District, and Cleveland Museum of Natural History, we have ensured the permanent protection and management of 18.03 km (11.27 mi) of shoreline habitat and 1.270 km^2 (313.88 ac) of inland habitat within 69 m (226 ft) of shore (see Table 2) in perpetuity. The total protected habitat indicated in Table 2 above is more than double the goal established in Criterion 2 of the Recovery Plan, and is sufficient to support nearly 50 percent of the recovery population goal of 5,555 adult Lake Erie Watersnakes. Further, as evidenced in Table 2, the recovery goals for protected habitat on each of the four major islands have either been met or exceeded. This protected habitat will provide a series of permanent refugia distributed across the islands and across the U.S. range of the subspecies that can support a substantial portion of the Lake Erie Watersnake population.

Voluntary Guidelines

Destruction or modification of hibernation habitat during the winter months when Lake Erie Watersnakes are

using such habitat may result in mortality of individual snakes, but will not threaten the population as a whole once the protection of the Act is removed. If snakes are excavated during the hibernation season it is unlikely that they would be able to search for and find alternate hibernacula due to cold temperatures and frozen or snow-covered ground, and would not survive exposure to winter weather. Once the species is delisted, no regulatory options will exist to address timing of impacts to hibernation habitat. To minimize impact to individual Watersnakes from this threat, the Service will widely distribute a revised version of "Lake Erie Watersnake Management Guidelines for Construction, Development, and Land Management Activities" (Service 2009). Further, we will recommend to local governments that they adopt and broadly distribute these voluntary guidelines.

The Service initially developed Lake Erie Watersnake Management Guidelines for Construction, Development, and Land Management Activities (Service 2009, Service 2003b) when the subspecies was listed. These voluntary guidelines were intended to substantially reduce the potential for take to occur during typical private and public land management activities such as lawn mowing, tree cutting, and excavation activities. The guidelines recommend seasonal restriction on activities such as excavation and mowing, design recommendations for shoreline structures that will enhance Lake Erie Watersnake summer habitat, and suggestions for monitoring snakes during construction activities (Service 2009, p. 1-2; Service 2003b, pp. 2-4). Though the guidelines are voluntary, they have been added as mandatory conditions on Federal permits and as Reasonable and Prudent Measures in Biological Opinions and Incidental Take Statements to avoid and minimize take during the completion of projects that required section 7 consultation or section 10 permits under the Act (for example, see Service 2008, p. 5). If the subspecies is delisted, these guidelines will still be recommended under the auspices of the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e) when reviewing Federal activities that are planned within Lake Erie Watersnake habitat areas. This will aid in avoiding and minimizing habitat loss to individual watersnakes due to typical land management actions on private property. However, for any incidental take statements or incidental take permits that have already been issued under sections 7 or 10 of the Act, but for which the projects have not yet been implemented, Lake Erie Watersnake conservation measures will no longer be mandatory.

Range Curtailment

The historical range of the Lake Erie Watersnake includes the offshore islands of the western Lake Erie basin in the U.S. and Canada and portions of the Catawba-Marblehead peninsula on the mainland of Ohio, though the threatened DPS includes only those Lake Erie Watersnakes occurring on U.S. islands greater than 1.6 km (1 mi) from the Ohio mainland (64 FR 47126). The U.S. islands and rock outcrops within the historic range include, but are not limited to, the islands called Kelleys, South Bass, Middle Bass, North Bass, Sugar, Rattlesnake, Green, Gibraltar, Starve, Gull, Ballast, Lost Ballast, West Sister, Mouse, and Johnson. The Canadian islands and rock outcrops within the historical range include, but are not limited to, the islands called Pelee, Middle, East Sister, Middle Sister, North Harbour, Hen, Chick, Big Chicken, and Little Chicken (Figure 1).

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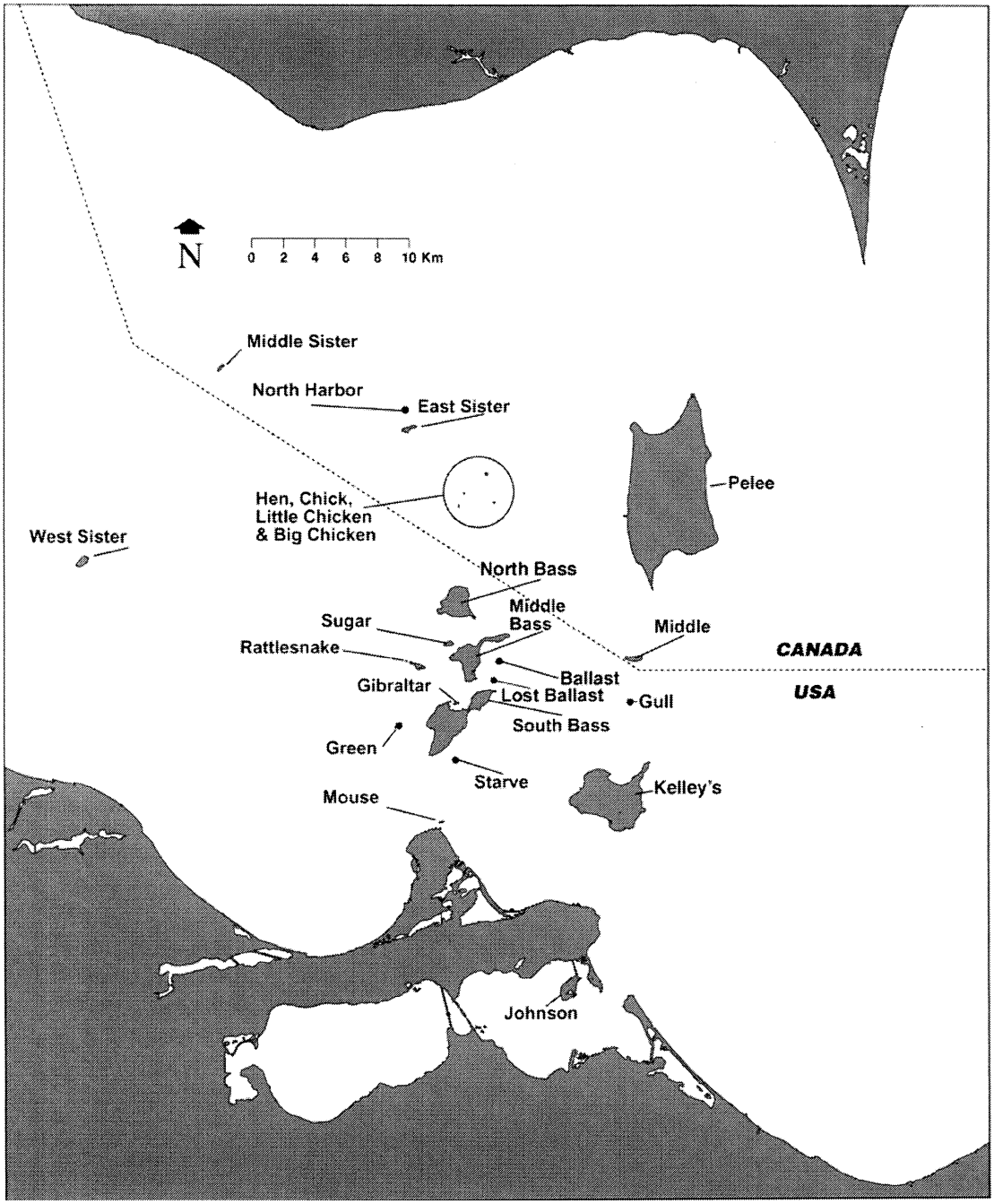

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Figure 1. Historical range of Lake Erie Watersnake within the western Lake Erie basin of Ohio and Canada. Map courtesy of Barbara Ball and Department of Biological Sciences, Northern Illinois University.

At the time of listing, Lake Erie Watersnakes had been extirpated from two U.S. islands within the range, Green and West Sister, and two Canadian islands, Middle Sister and North Harbour. Further, population declines documented over several decades, along with the limited geographic range and insular nature of the Lake Erie Watersnake population, indicated that without the Act's protection, further range contraction was possible.

Since the time of listing, Lake Erie Watersnakes have naturally recolonized Green Island, a small island close to South Bass Island, and a viable population of adult watersnakes has persisted there for 6 years after an absence of 10 or more years (King and Stanford 2009, p. 7; King 2002, p. 4). This natural recolonization demonstrates the importance of maintaining multiple subpopulations of the Lake Erie Watersnake on as many islands as possible, to provide source populations for recolonization, should a stochastic event occur that eliminates all or a significant portion of the population on another island.

Lake Erie Watersnakes were known from West Sister Island based on specimens collected there in 1938 and 1939 but were not collected during repeated searches in the 1980s and 1990s (King *et al.* 2006a, p. 86). While it is not known why Lake Erie Watersnakes disappeared from West Sister Island, it is the most isolated of the U.S. islands, located approximately 13.7 km (8.5 mi) from the mainland and approximately 20.9 km (13.0 mi) from

the nearest island. Three intensive snake surveys since the time of listing have documented two adult female watersnakes on West Sister Island, one in 2002 and one in 2008, though it is unclear if these individuals were members of a permanent resident population, or transient individuals that swam or drifted to the island (King and Stanford 2009, p. 9). King and Stanford (2009, p. 9) conclude that "Lake Erie Watersnakes remain exceedingly rare or absent from West Sister Island."

A main portion of the 2003 Recovery Plan's strategy was to ensure the persistence of multiple subpopulations of the Lake Erie Watersnake on each of the large islands, as well as the small islands on which the watersnake was already present. The presence of multiple population centers helps to protect against stochastic events, such as storms, severe winters, or fire. If entire subpopulations are lost from a catastrophic event, the presence of other subpopulations provides the opportunity for individuals to recolonize the disturbed area. The chance that the species will persist over time increases with the presence of additional subpopulations. Further, the maintenance of multiple subpopulations ensures that genetic diversity that may exist across the range is maintained. The Service and our partners have demonstrated over the past 8 years that Lake Erie Watersnakes have met the population persistence criterion in the Recovery Plan (Service 2003a, pp. 28-29), including the portion of the criterion requiring a specific adult Lake Erie Watersnake population estimate on each of the four large islands, and persistence of Lake Erie Watersnakes on the small islands (Rattlesnake, Sugar, Gibraltar, Ballast, and Green) throughout this same period. Further, annual surveys have documented range expansion of the Lake Erie Watersnake within its historical range since the time of listing, including the recolonization of Green Island. Coupled, these data indicate that the population of Lake Erie Watersnakes is secure across its range and is likely to persist into the foreseeable future, even if the protections of the Act are removed (see Factor D).

Summary of Factor A: Individuals of the Lake Erie Watersnake face a low amount of residual threat from habitat destruction or modification due to development within the Lake Erie islands within the foreseeable future, though the watersnake population has proven resilient to much of the development that has occurred since listing. Summer and hibernation habitat sufficient to support approximately 50 percent of the adult Lake Erie Watersnake recovery population has been protected in perpetuity. Impacts to summer shoreline and foraging habitat will still be regulated by the Corps, and the Service will provide comments to avoid and minimize impacts to Lake Erie Watersnake under the authority of the Fish and Wildlife Coordination Act. Impacts to hibernation habitat will directly affect individual watersnakes if the impacts occur during the hibernation season, however, existing standardized voluntary guidelines to limit winter excavation have been and will continue to be widely distributed to address those impacts. The Lake Erie Watersnake has recolonized a portion of its historic range, its adult populations have shown conclusive growth, and the recovery criteria for island-specific and overall adult population size have been substantially exceeded for the past eight years. Therefore, we determine that the present or threatened destruction, modification, or curtailment of its habitat or range, is not currently causing, or likely to cause in the foreseeable future, the subspecies to be threatened or endangered.

B. Overutilization for Commercial, Recreational, Scientific, or Education Purposes

We know of no recreational, commercial, or educational overutilization of the Lake Erie Watersnake. Lake Erie Watersnakes are not currently a collected or sought-after species, and no recreational or commercial collection of this subspecies has been documented to date. The historical collection of Lake Erie Watersnakes for scientific purposes is well-documented in the final listing rule (64 FR 47126; August 30, 1999). However, since 1966, formal research on wild animals has been regulated by the U.S. Department of Agriculture, Animal and Plant Health Inspection Services, Animal Care Division, under the Animal Welfare Act, as amended (7 U.S.C. 2131-2159). Further, institutions conducting research using live vertebrate animals and receiving funding from the Public Health Service require approval of research proposals by the Institutional Animal Care and Use Committee. This oversight will help to ensure that any scientific collection will not result in overutilization of the species, to the point that population-level effects are likely to occur. Therefore, we do not believe overutilization to be a current threat to the species, nor likely to be in the foreseeable future.

C. Disease or Predation

At the time of listing, neither disease nor predation was implicated in the decline of Lake Erie Watersnakes. We currently have no data indicating that disease is a threat to the Lake Erie Watersnake. Predators of the Lake Erie Watersnake include a number of species native to the islands, specifically herring gull (*Larus argentatus*), great blue heron (*Ardea herodias*), robin (*Turdus migratorius*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), blue racer (*Coluber constrictor*), and mink (*Mustela vison*) (Camin and Ehrlich 1958, p. 510; Goldman 1971, p. 197; King 1986, p 769; King 1987, p. 242, 250; King 1989. p. 87; Stanford 2009, pers. comm.). We anticipate that other birds, predatory fish, and mammals likely prey on Lake Erie Watersnakes, particularly neonate and immature snakes. Predation of individual Lake Erie Watersnakes clearly is occurring, however all of these predators are native to the islands and the snake's population has persisted in the face of such predation both historically and currently. As the Lake Erie Watersnake population has shown steady increases despite no observed change in predation pressure since the time of listing, we determine that mortality due to predation is not a substantial threat to the subspecies now, nor will it be within the foreseeable future.

D. The Inadequacy of Existing Regulatory Mechanisms

The 1999 final listing rule (64 FR 47126) describes various status designations of the Lake Erie Watersnake at State, Provincial, and Federal Canadian levels , but concluded that "regulatory mechanisms are inadequate because of the small number of water snakes in preserves and the vulnerability from lack of regulatory protection outside of preserves." As described above in Factor A, a substantial amount of Lake Erie Watersnake habitat has been protected since 1999 by management agreements, conservation easements, or deed restrictions. Protected habitat includes 18.03 km (11.27 mi) of summer habitat and 1.270 km^2 (313.88 ac) of hibernation habitat within 69 m (226 ft) of shore (Table 2). This amount of habitat is sufficient to support approximately 50 percent of the recovered population goal of 5,555 adult Lake Erie Watersnakes, and is distributed throughout the U.S. range of the subspecies.

In addition to the protected habitat, since the time of listing a substantial portion of additional island habitat has

been acquired by the Ohio Department of Natural Resources. These lands include 0.5 km² (123 ac) of Middle Bass Island and 2.4 km² (593 ac) of North Bass Island. The portions of these islands within 69 m (226 ft) of shore are included as protected habitat, but the remainder of these properties may also provide habitat for the 25 percent of Lake Erie Watersnakes that hibernate greater than 69 m (226 ft) inland. Middle Bass Island State Park is dedicated to boating, camping, and recreation, while North Bass Island will remain primarily natural (ODNR 2004, p.1).

Further, since the time of listing, the Lake Erie Islands Chapter of the Black Swamp Conservancy, a non-profit land conservancy, was established and is acquiring conservation easements on island properties. All of their properties within 69 m (226 ft) of shore are included as protected habitat, however an additional 6 acres (0.02 km²) of land may also provide habitat for the 25 percent of Lake Erie Watersnakes that hibernate greater than 69 m (226 ft) inland. This habitat will remain in a natural state for the foreseeable future.

The Cleveland Museum of Natural History maintains multiple preserve properties on Kelleys Island. All of their properties within 69 m (226 ft) of shore are included as protected habitat, however an additional 99 acres (0.4 km²) of land may also provide habitat for the 25 percent of Lake Erie Watersnakes that hibernate greater than 69 m (226 ft) inland. This habitat will remain in a natural state for the foreseeable future.

As discussed under Factor A above, since the Lake Erie Watersnake was listed in 1999, destruction and modification of watersnake summer habitat has been addressed under section 7 of the Act through the Corps section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act authority. These laws provide the Service the opportunity to review and comment on all projects affecting Lake Erie Watersnake foraging habitat, and many projects affecting shoreline habitat. Under these authorities, the Service has consistently recommended installation of rip-rap erosion control structures and crib docks in lieu of vertical concrete or sheet steel. This substantially reduced shoreline habitat degradation and resulted in the creation of artificial shoreline habitat for Lake Erie Watersnakes on many islands. We anticipate that similar projects impacting the islands' shorelines and the Lake Erie Watersnake's summer habitat will continue into the foreseeable future. As noted above, the vast majority of these projects are regulated by section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act, and as such, the Service will still have the opportunity to review and comment on these projects via the Corps' Public Notice process, even if the watersnake is delisted. The Service plans to continue recommending rock structures as opposed to vertical structures on these types of projects, under the authority of the Fish and Wildlife Coordination Act. This regulatory mechanism will remain in place into the foreseeable future, allowing the Service to maintain some oversight and input relative to the condition of island shorelines for the Lake Erie Watersnake.

Currently, the Lake Erie Watersnake is listed as a State endangered species under the Ohio Revised Code 1531.25. State endangered status is defined as: "A native species or subspecies threatened with extirpation from the state. The danger may result from one or more causes, such as habitat loss, pollution, predation, interspecific competition, or disease" (ODNR 2008, p. 1). Coordination with ODNR Division of Wildlife indicates that the State is supportive of the Service's proposal to delist the Lake Erie Watersnake as they believe that "the snake population appears secure and growing throughout its range," and, "[t]he snake warrants removal from Federal protection" (ODNR 2009, p. 1). ODNR Division of Wildlife has proposed that, upon Federal delisting, the Lake Erie Watersnake would be reclassified to State threatened status, and is likely to remain as such for the foreseeable future (ODNR 2009, p.1). State threatened status "affords a heightened perception of importance and conservation need by the public," and "provides a mechanism for filing criminal charges against people who are responsible for direct mortality" (ODNR 2009, p. 1). Therefore, State take prohibitions reducing the threat from intentional human persecution will still exist if the Lake Erie Watersnake is Federally delisted.

In summary, substantial protected habitat and permanently conserved natural habitat on the U.S. western Lake Erie islands have been established since the time of listing. These areas are sufficient to support approximately 50 percent of the recovery population goal of 5,555 adult Lake Erie Watersnakes. Some jurisdiction over impacts to Lake Erie Watersnake summer habitat will be maintained post-delisting via the Corps section 404 and section 10 authorities. Further, the proposed State reclassification of the Lake Erie Watersnake to a threatened designation will maintain the existing prohibition on intentional mortality of watersnakes and will provide a mechanism for filing criminal charges should intentional direct mortality occur. We have determined that tese regulatory mechanisms and cooperative agreements are sufficient to ensure the persistence of Lake Erie Watersnakes in the foreseeable future, and therefore Lake Erie Watersnakes will not be threatened by the inadequacy of existing regulatory mechanisms post-delisting.

E.Other Natural or Manmade Factors Affecting Its Continued Existence

Human Persecution and Other Human-Induced Mortality

As indicated in the final listing rule for the Lake Erie Watersnake (64 FR 47131; August 30, 1999), "persecution by humans is the most significant and well documented factor in the decline of Lake Erie Watersnakes." Therefore, the recovery strategy for the watersnake focused heavily on public outreach and education in an attempt to change the negative perception and hostile behavior of some island residents and visitors towards the watersnake. As described in detail in **Recovery** above, public opinion surveys were conducted to gauge island landowner perception of the Lake Erie Watersnake, and past, current, and likely future behavior towards the snake (Olive 2008, Wilkinson 2008).

Generally, the survey results indicate that Federal, State, and non-governmental organizations' outreach and education campaigns are reaching the vast majority of island residents, and are helping to increase their access to information about the watersnake (Wilkinson 2008, p. 5). While it is apparent that not all residents feel positively toward the snake, it is very notable that, despite human persecution being the most significant factor in the historical decline of the Lake Erie Watersnake, only about 4 percent of respondents indicated they had knowingly killed a watersnake since the time of listing, and only about 14 percent of respondents said they would knowingly kill a watersnake if it was no longer protected by State or Federal laws (Wilkinson 2008, p. 6). Of those Middle Bass Island residents interviewed by Olive (2008, pp. 112-113, 153), 7 percent admitted to killing a snake and 18 percent admitted they might kill a snake while it is listed. We interpret these responses to indicate that, while individual watersnakes still face some human persecution, the vast majority of islanders would not resort to

lethal means if they encountered watersnakes on their property.

Despite the admitted intentional mortality documented by both Wilkinson (2008, p. 6) and Olive (2008, pp. 112-113, 153) adult Lake Erie Watersnake populations have increased substantially since the time of listing, both across the U.S. range and on each large island (King and Stanford 2010, p. 11; King and Stanford 2009, pp. 6-7). This indicates that the adult Lake Erie Watersnake population can tolerate some degree of intentional mortality of individual snakes and still persist at a recovery level.

Public opinion of the Lake Erie Watersnake varies widely among those who support it, those that who have no opinion, and those that dislike or fear the watersnake specifically, or snakes in general. Outreach efforts have reached nearly all island residents, increasing access to information about the Lake Erie Watersnake, including non-lethal ways to address nuisance snakes. Opinion surveys indicate that most people do not now, and will not in the future, kill Lake Erie Watersnakes, however many people indicate that the sheer number of snakes along the shoreline has become a nuisance, and this may contribute to negative feelings towards the snake. As Lake Erie Watersnake numbers have rebounded, and a significant amount of habitat has now been permanently protected to support its populations, the Lake Erie Watersnake population can withstand a limited amount of intentional mortality. While the threat of intentional mortality likely can never be completely eliminated, results of public opinion surveys indicate that the amount of mortality anticipated from intentional human persecution on its own and with other residual threats is not likely to cause the subspecies to become threatened or endangered again within the foreseeable future.

Continued outreach regarding the Lake Erie Watersnake after delisting will be important in ensuring that island landowners and visitors maintain access to information about the biology of the snake, its conservation status, and its role in the ecosystem. Following delisting, outreach will continue to focus on changing the negative perceptions and hostile behavior of some island residents and visitors towards the watersnake. Outreach activities will continue through various partners, focusing on establishing permanent informational displays at specific island locations. For example, an Ohio Environmental Education Grant was recently awarded to the Lake Erie Islands Nature and Wildlife Center and Lake Erie Islands Historical Society to design interpretive posters and a permanent display that specifically address the Lake Erie watersnake, its current status, and conservation needs (Stanford 2009, pers. comm.). The display will be housed at the Lake Erie Islands Nature and Wildlife Center on South Bass Island while the posters will be made available to local organizations and school teachers and will promote consistent education among a variety of audiences and locations (Stanford 2009, pers. comm.). The permanent display at the Lake Erie Islands Nature and Wildlife Center will provide education for the entire island community, as well as the estimated 5,000-10,000 visitors anticipated per year (Stanford 2009, pers. comm.). This display will explain the current Lake Erie Watersnake legal status and the protective guidelines, which can be updated as needed if the snake is delisted (Stanford 2009, pers. comm.). Similarly, a permanent display on the Lake Erie Watersnake is currently being developed at ODNR's Aquatic Visitor's Center on South Bass Island. Additional signage or displays about the Lake Erie Watersnake are planned for ODNR's Middle Bass Island State Park (Service 2008, p. 5) and the Scheef East Point Nature Preserve on South Bass Island (ODNR 2007, pp. 6, 9).

In addition to intentional human persecution, several sources of accidental human-induced mortality were examined to determine to what degree they contribute to overall mortality of Lake Erie Watersnakes, and if they are a threat to the population. These include mortality from hook and line fishing, roadkill mortality, contaminants, and the interaction between Lake Erie Watersnakes and invasive species. These potential threats are discussed in detail under **Recovery,** above. Based on recent research, accidental human-induced mortality occurring from boating, fishing, and roadkill events does not pose a threat to the adult Lake Erie Watersnake population (Brown and Weatherhead 1999, Stanford 2004, King 2007). Further, invasive species and contaminants do not threaten the adult Lake Erie Watersnake population (Bishop and Rouse 2006, King *et al.* 2006b, Fernie *et al.* 2008) now or in the foreseeable future.

However, one new potential threat to Lake Erie Watersnakes has emerged. In May 2008 erosion control blankets were placed over an excavated area on Gibraltar Island, a small Lake Erie island. Within three days, 25 adult Lake Erie Watersnakes became entangled in the erosion control blankets that were placed over approximately 1347 m^2 (0.33 ac) (Stanford 2008, pers. comm.). The erosion control blankets were single net, filled with straw, and photodegradable within 45 days (Stanford 2008, pers. comm.). Entanglement occurred on the first warm days of the summer and we assume that many snakes were emerging to bask, forage, and mate. When the entangled snakes were discovered, they were cut from the blankets; however 14 adult male Lake Erie Watersnakes died (Stanford 2008, pers. comm.). Mortality was thought to be due to suffocation or sun exposure, though necropsies were not conducted. Upon discovery of the snakes, all of the erosion mesh was immediately removed (Stanford 2008, pers. comm.). Since this event, when consulting on projects on the islands, the Service has requested that erosion control blankets not be used (for example, see Service 2008, p. 2). If this proposal is finalized and the species is delisted, we will continue to include this recommendation under the authority of the Fish and Wildlife Coordination Act when reviewing Federal activities on the islands. Additionally, we have incorporated this recommendation into the revised Lake Erie Watersnake Management Guidelines for Construction, Development, and Land Management Activities (Service 2009, p. 2), which will be widely distributed, as described under Factor A above. We believe that through these mechanisms, entanglement in erosion control blankets or similar materials will not pose a substantial threat to the Lake Erie Watersnake population.

Small Population Size

As noted in the listing document (64 FR 47126; August 30, 1999), all of the known threats were exacerbated by the small population size and the insular distribution of Lake Erie Watersnakes. According to the listing document, "the current low population densities and insular distribution of Lake Erie Watersnake make them vulnerable to extinction or extirpation from catastrophic events, demographic variation, negative genetic effects, and environmental stresses such as habitat destruction and extermination" (64 FR 47126; August 30, 1999). Since the time of listing, the adult Lake Erie Watersnake population has increased substantially. Annual adult Lake Erie Watersnake population censuses and estimates indicate that the population is growing by approximately 6 percent per year, and that the current snake population far outnumbers the goal of 5,555 adult Lake Erie Watersnakes required for the population to be

recovered (King and Stanford 2009, pp. 6-7; Service 2003a, pp. 28-29, 33).

King and Stanford (2009, pp. 5-8) recently analyzed Lake Erie Watersnake survey data from the period 1996-2008, and used Program MARK to model adult survival, and used Jolly-Seber population estimates to estimate sex ratios in adult Lake Erie Watersnakes. The generated estimates for adult sex ratio (1.6 male: 1 female) and adult survival (0.70) proved to be different than the sex ratio and adult survival rates used in setting the overall Population Persistence criterion of the 2003 Lake Erie Watersnake Recovery Plan at 5,555 adult Lake Erie Watersnakes. Incorporating the new adult sex ratio and adult survival estimates into the formula used in the Recovery Plan to generate the adult Lake Erie Watersnake population goal (Service 2003a, p. 31) yielded a revised population goal of 6,100 adult Lake Erie Watersnakes (King and Stanford 2009, p. 8). King and Stanford (2009, p. 8) note that, "the estimated adult Lake Erie Watersnake population size exceeds this value [6,100] for all years from 2002-2008." Further, King and Stanford (2009, p.8) caution that the adult population goals "are based on a series of approximations...As a consequence, such estimates are best viewed as "educated guesses" that may change as more information is obtained." Irrespective of which adult population goal is used, 5,555 as outlined in the Recovery Plan (Service 2003a, p. 28) or 6,100 as recently recalculated using more current information (King and Stanford 2009, p. 8), the adult Lake Erie Watersnake population has met and exceeded both of these goals for seven consecutive years (2002-2008) (King and Stanford 2009, p. 22). Therefore we no longer find that low population numbers increase the severity of any potential threats.

Further, the presence of multiple subpopulations distributed throughout the range of the subspecies provides assurance that genetic diversity is being maintained, and provides multiple source populations should one subpopulation be eliminated due to a catastrophic event. Because Lake Erie Watersnakes are an island-dwelling subspecies, and their range is naturally restricted to a series of relatively small islands in western Lake Erie, it is likely that they will always have a population size that may be considered small relative to species with a much larger range. However, analysis of Lake Erie Watersnake population size, as described in the Recovery Plan (Service 2003a) indicates that a census population size of 5,555 adult watersnakes constitutes a viable, persistent population. Therefore, we no longer find that the insular distribution of the Lake Erie Watersnake increases the severity of any potential threats.

Climate Change

Global climate change due to trapping of greenhouse gases, particularly carbon dioxide, within the atmosphere is widely predicted by scientists all over the world (IPCC 2007, p. 9). Within the Great Lakes region and Ohio specifically, climate change is expected to bring increased temperatures, increased but altered distribution patterns of precipitation, and greater intensity of extreme weather events including drought, storms, floods, and heat waves (Karl *et al.* 2009, p. 117; Kling *et al.* 2003, pp. 17-18). Winters will be of shorter duration and warmer temperatures and snow melt will occur earlier (Kling *et al.* 2003, pp. 17-18). These projected changes in seasonal temperature patterns may cause Lake Erie Watersnakes to hibernate for shorter periods of time, to seek cover more frequently during the active season to escape extreme weather events, and to forage more frequently than they do now to compensate for an extended active season. It is unlikely that these potential behavioral changes brought on by warmer temperatures would constitute a threat to the population.

Warmer temperatures and decreased ice cover across the Great Lakes region predicted by multiple models could result in warmer water temperatures and water levels between 0.3-0.6 m (1-2 ft) below current levels in Lake Erie (Karl *et al.* 2009, pp. 119, 122; Kling *et al.* 2003, pp. 23-24). Decreases in Lake Erie water levels, which define the boundaries of the western Lake Erie islands, can lead to increases in the area of the island exposed, expansion or loss of coastal wetland habitat (depending on elevation and topography), changes in extent or composition of island shoreline habitat, and changes in erosion and accretion patterns. Over all, lower water levels will likely create additional linear footage of island shorelines within the western Lake Erie basin, potentially expanding Lake Erie Watersnake summer terrestrial habitat areas. Portions of former foraging habitat may dry, requiring watersnakes to seek out additional foraging territories. Water depth decreases of 0.3 to 0.6 m (1 to 2 ft) are unlikely to disturb large portions of Lake Erie Watersnake foraging habitat. As noted previously, Lake Erie Watersnakes' diets are composed primarily of round goby, which are plentiful in the warm waters of the western Lake Erie island region, and would likely remain plentiful despite potential effects from climate change. It is unlikely that lower water levels would significantly change Lake Erie Watersnake behavior, or represent a threat to the population.

Climate change projections for Lake Erie indicate that increases in water temperature during the summer may result in lower dissolved oxygen, and prolonged stratification of lake water, resulting in an increase in the potential for dead-zones to occur or expand across time and space (Karl *et al.* 2009, p. 122; Kling *et al.* 2003, p. 22). However, the western Lake Erie basin is generally shallow, with an average depth of 7.4 m (24 ft), and stratification is rare here, and brief when it does occur (USEPA and Environment Canada 2008, p. 18), and therefore we do not anticipate a threat to the population from this projected change. However, low dissolved oxygen could also result in more easily mobilized mercury and other contaminants that exist in Lake Erie sediments, and introduction of increased contaminant loads into the food chain (Karl *et al.* 2009, p. 122). It is possible that additional contaminant loads could result in physiological or reproductive impacts to Lake Erie Watersnakes, but what the effective concentrations of these contaminants are is unknown. As discussed above, contaminants have been detected in Lake Erie Watersnakes in relatively high levels, but have not been documented to cause adverse effects; therefore we do not anticipate that a potential increase in contaminant mobilization within the waters of Lake Erie due to warming water temperatures poses a threat to Lake Erie Watersnakes.

Warmer lake waters are anticipated to result in coldwater habitat being eliminated or shifting north in some areas, potentially changing the fish communities in these areas (Karl *et al.* 2009, p. 122; Kling *et al.* 2003, pp. 53-54). However, the western basin of Lake Erie is composed of warm water habitat already (USEPA and Environment Canada 2008, p. 18) and is too shallow to support coldwater habitat, therefore we do not anticipate shifts in fish species composition within the western Lake Erie basin due to climate change, and therefore no threat to the Lake Erie Watersnake is anticipated.

At this time, we do not have sufficient information to document that climate change poses a significant threat to the continued existence of the Lake Erie Watersnake.

Summary of Factor E: Intentional human-induced mortality is a residual threat to the Lake Erie Watersnake,

however Lake Erie Watersnake numbers have rebounded and a significant amount of habitat has now been permanently protected to support Lake Erie Watersnake populations, and the Service believes that the Lake Erie Watersnake population can withstand a limited amount of intentional mortality and still maintain recovery-level population size. While the threat of intentional mortality likely can never be completely eliminated, results of public opinion surveys indicate that the amount of mortality anticipated from intentional human persecution on its own and with other residual threats is not likely to cause the subspecies to become threatened or endangered again within the foreseeable future. Unintentional human-induced mortality, such as occurs from road-kill, hook and line fishing, contaminants, and impacts of invasive species, has been researched throughout the recovery period and has not been documented to cause take in levels sufficient to impact the adult Lake Erie Watersnake population. Unintentional mortality through entanglement in erosion control fabrics, though rare, will be addressed through continued outreach and through coordination with the Corps on projects that impact Lake Erie Watersnake summer habitat. Lake Erie Watersnake persistence is no longer threatened by small population size or limited distribution, as they have substantially increased in number and expanded in range since the time of listing, and protected habitat sufficient to support 50 percent of the recovery population is distributed across all of the large islands. Finally, we have assessed the potential for climate change to impact the Lake Erie Watersnake based on projected habitat changes in Great Lakes-regional and Ohio models, and have determined that we do not have sufficient information to document that climate change poses a significant threat to the continued existence of the Lake Erie Watersnake. Therefore, we find that other natural or man-made factors, coupled with any other residual threats are not likely to cause the subspecies to become threatened or endangered again within the foreseeable future.

Summary of Threats

As demonstrated in our **Summary of Factors Affecting the Species**, threats to the Lake Erie Watersnake have been abated or sufficiently minimized over the U.S. range of the subspecies. Recovery actions and a reduction or abatement of threats have lead to demonstrated population growth at multiple sites, increasing population estimates, range expansion within the historical range, proof of resiliency of the Lake Erie Watersnake to some habitat modification, and protection of a significant amount of summer and hibernation habitat throughout the range.

The biological principles under which we evaluate the rangewide population status of the Lake Erie Watersnake relative to its long-term conservation are representation, redundancy, and resiliency (Groves, *et al.* 2003, pp. 30-32). At the time of listing, the Lake Erie Watersnake population had declined substantially from historical numbers and its range had contracted due to extirpation from several U.S. and Canadian islands. Since listing, population numbers have rebounded, real population growth at multiple sites has been documented, and the range has expanded to include multiple stable or increasing subpopulations across most of its historical range (West Sister Island is the only U.S. exception, as discussed in Factor A above) (King and Stanford 2009, pp. 6-9). Thus, there is adequate representation (occupancy of representative habitats formerly occupied by the Lake Erie Watersnake across its range) and redundancy (distribution of populations in a pattern that offsets unforeseen losses across a portion of the range) to support the long-term persistence of the Lake Erie Watersnake.

The Lake Erie Watersnake has demonstrated resilience and behavioral plasticity to both ecological and human-induced changes in its environment in the recent past. As described above, the Lake Erie Watersnake has made a nearly complete dietary shift since the invasion of the round goby in the early 2000's, indicating flexibility in prey selection (King *et al.* 2006b, p. 110). We now know that crib docks and armored shorelines provide valuable Lake Erie Watersnake summer habitat and that the Lake Erie Watersnake can persist in stable numbers in human-dominated island landscapes, as long as rocky or vegetated shorelines are present. Further, we have documented multiple situations where Lake Erie Watersnakes have been able to identify and successfully use new hibernation sites when historical hibernation sites are destroyed or unavailable, indicating that the Lake Erie Watersnake is more resilient to certain types of habitat modification than was previously known. The Lake Erie Watersnake has also demonstrated its ability to naturally re-colonize historical habitat after an absence of many years. Thus, despite any residual threats to individual watersnakes, we find the Lake Erie Watersnake has sufficient resiliency to persist within the foreseeable future.

Intensive adult Lake Erie Watersnake censuses and subsequent analysis of the census data over the past 10 years have demonstrated a growing population, range expansion, and successful reproduction over multiple generations (King and Stanford 2009, pp. 6-7, 9). There is no evidence of recent extirpations of subpopulations, nor of a population sink. As previously described, habitat destruction and modification are not thought to be significant threats to the population now or within the foreseeable future (see Factor A above).

Recovery efforts have provided increased attention and focus on the Lake Erie Watersnake and the habitat upon which it depends. Numerous conservation actions have been implemented by government agencies, universities, and conservation groups. Most notably, these include intensive research and population monitoring of Lake Erie Watersnakes by NIU and other partners, and land purchase and conservation on many islands within the range of the subspecies by ODNR, LEIC-BSC, Western Reserve Land Conservancy, and Put-in-Bay Township Park District.

In summary, all of the past, existing, or potential future threats to the Lake Erie Watersnake, either alone or in combination, have either been eliminated or largely abated throughout all of its range. The major factors in listing the Lake Erie Watersnake were human persecution and habitat destruction and modification. These threats have largely been abated as evidenced by the substantial recovery of the snake. Therefore, we have determined that the Lake Erie Watersnake is no longer in danger of extinction or likely to become so throughout all of its range in the foreseeable future.

Significant Portion of the Range Analysis

Having determined that the Lake Erie Watersnake is not in danger of extinction or likely to become so in the foreseeable future throughout all of its range, we must next consider whether the subspecies is in danger of extinction or is likely to become so in any significant portion of its range.

A portion of a species' range is significant if it is part of the current range of the species (species used here is as defined in the Act, to include species, subspecies, or DPS) and if it is important to the conservation of the species because it contributes meaningfully to the representation,

resiliency, or redundancy of the species. The contribution must be at a level such that its loss would result in a decrease in the ability to conserve the species.

Applying the definition described above for determining whether a species is endangered or threatened in a significant portion of its range, we first addressed whether any portions of the range of the Lake Erie Watersnake warranted further consideration. As described in Factor A and Factor E above, some threats to the species will remain post-delisting, primarily loss of hibernation habitat during the winter hibernation season and intentional human persecution. These threats exist across the range of the species, and are not concentrated in any one area. We concluded, however, that these threats were not substantial enough to pose a threat to the viability of the subspecies within the DPS. Therefore, based on the discussion of the threats above, we do not foresee the loss or destruction of any portions of the subspecies' range such that our ability to conserve the subspecies would be decreased. Therefore, we find that the Lake Erie Watersnake is not in danger of extinction and is not likely to become endangered in the foreseeable future throughout all or a significant portion of its range.

Summary

The Service has considered the status of the Lake Erie Watersnake relative to the recovery criteria, which looked in general at population trends and status, and we have completed the five-factor analysis, and on all counts we have determined that this subspecies no longer meets the definition of threatened or endangered throughout all or any significant portion of its range. Thus, we propose to remove the Lake Erie Watersnake from the List due to recovery.

Effects of the Proposed Rule

If made final, this rule would revise 50 CFR 17.11 (h) to remove the Lake Erie Watersnake from the List. The prohibitions and conservation measures provided by the Act, particularly through sections 7 and 9, would no longer apply to this species. Federal agencies would no longer be required to consult with us if any action they authorize, fund, or carry out may affect the Lake Erie Watersnake.

Critical Habitat Prudency Determination

In this proposed rule to delist the Lake Erie Watersnake, we have determined that it is no longer in danger of extinction or likely to become so throughout all or a significant portion of its range. The major factors for listing the Lake Erie Watersnake were human persecution and habitat and range destruction, modification or curtailment and these threats have been abated. In particular, as discussed above in "Summary of Factors Affecting the Species", we have determined that the Lake Erie Watersnake is more adaptable to changes in its habitat, able to use more types of habitat than previously thought and will recolonize habitat after a substantial amount of time. Therefore, based on a review of the best available data, we have determined that the present or future habitat destruction, modification or curtailment is no longer a factor leading to threatened or endangered status for the Lake Erie Watersnake. For these reasons, the designation of critical habitat and subsequent regulatory protections of designated critical habitat through section 7 of the Act would not be beneficial to the species. Therefore, we have determined that designation of critical habitat is not prudent. In the event that during the public review and comment period of this proposed rule to delist we receive information that would lead us to determine that the Lake Erie Watersnake should be listed as endangered or threatened, we will reconsider this critical habitat prudency determination.

Post-Delisting Monitoring

Section 4(g)(1) of the Act requires us, in cooperation with the States, to implement a monitoring program for not less than five years for all species that have been recovered and delisted. The purpose of this requirement is to develop a program that detects the failure of any delisted species to sustain itself without the protective measures provided by the Act. If, at any time during the monitoring period, data indicate that protective status under the Act should be reinstated, we can initiate listing procedures, including, if appropriate, emergency listing.

A draft post-delisting monitoring plan has been developed for the Lake Erie Watersnake, building upon and continuing the research that was conducted during the listing period. In summary, the plan proposes to conduct annual adult Lake Erie Watersnake population censuses, as have occurred throughout the listing period, for a period of 5 years post-delisting. The data collected will be used to generate annual adult Lake Erie Watersnake population estimates for the population as a whole, and for each of the four large islands, using the same methods as used previously (King *et al.* 2006a, pp. 88-91). During years one, three, and five, the collective data will be used to calculate lambda, the population growth rate, as described in King and Stanford (2009, pp. 5-7). Annual reports detailing the population estimates and population growth rates (if applicable) will be submitted to the Service and ODNR upon completion of data analysis by the individuals or groups conducting the census.

Additionally, all areas included as protected habitat will be monitored once per year, in collaboration with partners that manage the protected habitat (for example, ODNR, LEIC-BSC). The monitoring will ensure that the management plans, conservation easements, or other documents are being implemented as agreed, and that Lake Erie Watersnakes or suitable habitat persists on the site. Written documentation of the protected habitat monitoring will be filled in the Service's Ohio Field Office (see FOR FURTHER INFORMATION section).

Public opinion surveys will be conducted during year four of the post-delisting monitoring. These surveys will follow the same protocol and ask similar questions as the survey conducted in 2008, and responses will be compared to determine if and how public opinion of Lake Erie Watersnake may be changing, and if and to what extent human persecution may be impacting the Lake Erie Watersnake population post-delisting.

The post-delisting monitoring plan identifies measurable management thresholds and responses for detecting and reacting to significant changes in Lake Erie Watersnake protected habitat, distribution, and persistence. If declines are detected equaling or exceeding these thresholds, described below, the Service in combination with other post-delisting monitoring participants will investigate causes of these declines, including considerations of habitat changes, substantial human persecution, stochastic events, or any other significant evidence. The result of the investigation will be to determine if the Lake Erie Watersnake warrants expanded monitoring, additional research, additional habitat protection, or resumption of Federal protection under the Act.

The management thresholds for determining how the Service will respond to various monitoring outcomes are as follows:

(1) Post-delisting monitoring indicates that the species remains secure without the Act's protections if all the following are met: (a) The calculated population growth rate is greater than or equal to 1.0 for two out of three sampling

periods, including the last sampling period, (b) the adult population estimates are greater than 5,555 overall, and (c) each of the four large islands maintains the population goals as defined in the recovery plan (Service 2003a, pp. 28-29). Under these circumstances there would be no reason to relist the species, or continue PDM.

(2) Post-delisting monitoring indicates that the species may be less secure than anticipated at the time of delisting, but information does not indicate that the species meets the definition of threatened or endangered if the calculated population growth rate is less than 1.0 for two consecutive sampling periods. Should this situation occur, the Service would look closely at the results of the dietary study, public opinion survey, and implementation of voluntary guidelines to determine if any residual threats or concerns may be contributing to population declines. Variable courses of action may be considered to address any residual or emerging threats. The Service will also consider whether the population may be reaching carrying capacity and these population declines are a result of normalization around carrying capacity. Further, the Service would consider extending the PDM period for the Lake Erie Watersnake to ensure that the population does not meet the definition of threatened or endangered.

(3) Post-delisting monitoring yields substantial information indicating threats are causing a decline in the species' status since delisting, such that listing the species as threatened or endangered may be warranted if the calculated population growth rate is less than 1.0 for three consecutive sampling periods. Should this situation occur the Service would look closely at the results of the dietary study, public opinion survey, and implementation of voluntary guidelines to determine if any residual threats or concerns may be contributing to population declines. Variable courses of action may be considered to address any residual or emerging threats. The Service will also consider whether the population may be reaching carrying capacity and these population declines are a result of normalization around carrying capacity. Further, the Service would consider whether listing the Lake Erie Watersnake as threatened or endangered is warranted.

(4) Post-delisting monitoring documents a decline in the species' probability of persistence, such that the species once again meets the definition of a threatened or endangered species under the Act if the calculated population growth rate is less than 1 for two consecutive sampling periods *and* one of the two following situations occurs: The estimated population falls below the recovery goal of 5,555 adult Lake Erie Watersnakes, *or* one or more of the large island subpopulations fall below the population recovery goal specified in the recovery plan (Service 2003a pp. 28-29), when using the Jolly-Seber method of population estimation (Jolly 1965, Seber 1965).

The Service will complete a final report at the end of the 5–year post-delisting monitoring period, assessing the current status of the Lake Erie Watersnake population. It is the intent of the Service to work with all of our partners towards maintaining the recovered status of the Lake Erie Watersnake.

The draft post-delisting monitoring plan is available at *www.regulations.govwith* this proposed rule OR on the Service's Midwest region web site: *http://www.fws.gov/midwest/endangered*.

Peer Review

In accordance with our joint policy published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of such review is to ensure that our proposed rule is based on scientifically sound data, assumptions, and analyses. We will send peer reviewers copies of this proposed rule immediately following publication in the **Federal Register** and will invite them to comment, during the public comment period, on the specific assumptions and conclusions regarding the proposal to delist the Lake Erie Watersnake. We will consider all comments and information received during the comment period on this proposed rule during preparation of a final rulemaking. Accordingly, the final decision may differ from this proposal.

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(a) Be logically organized;

(b) Use the active voice to address readers directly;

(c) Use clear language rather than jargon;

(d) Be divided into short sections and sentences; and

(e) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

Paperwork Reduction Act of 1995

Office of Management and Budget (OMB) regulations at 5 CFR 1320 implement provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The OMB regulations at 5 CFR 1320.3(c) define a collection of information as the obtaining of information by or for an agency by means of identical questions posed to, or identical reporting, recordkeeping, or disclosure requirements imposed on, 10 or more persons. Furthermore, 5 CFR 1320.3(c)(4) specifies that "ten or more persons" refers to the persons to whom a collection of information is addressed by the agency within any 12-month period. For purposes of this definition, employees of the Federal government are not included.

This proposed rule and draft post-delisting monitoring plan do not include any new collections of information that require approval by OMB under the Paperwork Reduction Act.

This proposed rule does not include any collections of information that require approval by OMB under the Paperwork Reduction Act. We do not anticipate a need to request data or other information from 10 or more persons during any 12–month period to satisfy monitoring information needs. If it becomes necessary to collect standardized information from 10 or more non-Federal individuals, groups, or organizations per year, we will first obtain information collection approval from OMB.

National Environmental Policy Act

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), need not be prepared in connection with regulations adopted under section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951), Executive Order 13175, and the Department of Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. We have determined that there are no tribal lands affected by this proposal.

References Cited

A complete list of all references cited in this rule is available on the Internet at *http://www.regulations.gov*, or upon request from the Field Supervisor, Ohio Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Author(s)

The primary authors of this document are the staff members of the Ohio Field Office, U.S. Fish and Wildlife Service (see **FOR FURTHER INFORMATION CONTACT**).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as follows:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend §17.11 (h) by removing the entry "Snake, Lake Erie water" under "REPTILES" from the List of Endangered and Threatened Wildlife.

Dated: May 17, 2010

Gregory E. Siekaniec

Acting Director, Fish and Wildlife Service

[FR Doc. 2010–12910 Filed 5–28–10; 8:45 am]

BILLING CODE 4310–55–S

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R6-ES-2008-0053] [MO 92210-0-0008-B2]

Endangered and Threatened Wildlife and Plants; 12–month Finding on a Petition to List the White-tailed Prairie Dog as Endangered or Threatened

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of a 12–month petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service announce a 12–month finding on a petition to list the white-tailed prairie dog (*Cynomys leucurus*) as endangered or threatened under the Endangered Species Act of 1973, as amended. After a review of all available scientific and commercial information, we find that listing the white-tailed prairie dog is not warranted at this time. However, we ask the public to submit to us any new information that becomes available concerning the threats to the white-tailed prairie dog or its habitat at any time.

DATES: The finding announced in this document was made on June 1, 2010.

ADDRESSES: This finding is available on the Internet at *http://www.regulations.gov* at Docket Number FWS-R6-ES-2008-0053. Supporting documentation we used in preparing this finding is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Utah Field Office, 2369 West Orton Circle, Suite 50, West Valley City, UT 84119. Please submit any new information, materials, comments, or questions concerning this finding to the above street address.

FOR FURTHER INFORMATION CONTACT: Larry Crist, Field Supervisor, Utah Field Office (see **ADDRESSES**); by telephone at 801-975-3330; or by facsimile at 801-975-3331. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Background

Section 4(b)(3)(B) of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*), requires that, for any petition to revise the Federal Lists of Endangered and Threatened Wildlife and Plants that contains substantial scientific or commercial information that listing the species may be warranted, we make a finding within 12 months of the date of receipt of the petition. In this finding, we will determine that the petitioned action is: (1) Not warranted, (2) warranted, or (3) warranted, but the immediate proposal of a regulation implementing the petitioned action is precluded by other pending proposals to determine whether species are endangered or threatened, and expeditious progress is being made to add or remove qualified species from the Federal Lists of Endangered and Threatened Wildlife and Plants. Section 4(b)(3)(C) of the Act requires that we treat a petition for which the requested action is found to be warranted but precluded as though resubmitted on the date of such finding, that is, requiring a subsequent finding to be made within 12 months. We must publish these 12–month findings in the **Federal Register**.

Previous Federal Action

On July 15, 2002, we received a petition dated July 11, 2002, from the Center for Native Ecosystems, Forest Guardians, Biodiversity Conservation Alliance, and Terry Tempest Williams, requesting that the white-tailed prairie dog (*Cynomys leucurus*) be listed as endangered or threatened across its entire range. We acknowledged the receipt of the petition in a letter to the petitioners, dated August 27, 2002. In that letter we also stated that higher priority actions precluded addressing the petition immediately, but it would be addressed when funding allowed.

Section 4(b)(3)(B) of the Act requires that for any petition to revise the Lists of Threatened and Endangered Wildlife and Plants, to the maximum extent practicable, within 90 days after receiving the petition, we make a finding as to whether the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted. On November 9, 2004, we announced our 90–day finding (69 FR 64889) that the petition did not present substantial scientific or commercial information indicating that listing may be warranted. On July 12, 2007, in a Director's memorandum, the U.S. Fish and Wildlife Service (Service) announced that we would review the November 9, 2004, finding after questions were raised about the integrity of scientific information used and whether the decision was consistent with the appropriate legal standards. We received notice of a lawsuit from the Center for Native Ecosystems, and three other entities, on November 27, 2007, regarding our not-substantial 90–day finding. We agreed in a stipulated