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HABITAT
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SPECIES MANAGEMENT



Reptiles and Amphibians Project Guidance

Stakeholder Informed



Introduction

Reptiles and amphibians are important parts of both aquatic and terrestrial ecosystems. Although reptiles and amphibians are two distinct classes of vertebrates, they have historically been treated as one group for the purposes of research under the field of herpetology, as well as for habitat management. Reptiles include snakes, lizards, crocodiles and turtles, and amphibians include frogs, toads, and salamanders.

Both reptiles and amphibians have experienced drastic population declines, caused by habitat loss, fragmentation, and degradation, as well as climate change, predation and competition from invasive species, illegal collection, poaching and pollution. In addition, reptiles and amphibians around the world are threatened by diseases, particularly chytridiomycosis and ranavirus.

Building Your Program

Projects are divided into four categories: **Habitat**, **Species Management**, **Education and Awareness** and **Other Options**. You can build a program with more than one of each category but you must associate your program with at least one habitat. This Reptiles and Amphibians Project Guidance is in the **Species Management** category. You must associate your reptile and amphibian project with a habitat, and you may also associate it with **Education and Awareness** projects.



Habitat – Projects that focus on conservation actions to protect, restore and manage different habitats.



Species Management – Projects addressing the conservation needs of targeted wildlife species or groups of species.



Education and Awareness – Projects to improve awareness, understanding and skills relating to conservation and the environment.



Other Options – Specialized projects that add value to your conservation efforts.

Browse the Project Guidance library at wildlifehc.org/pg.

What Do Reptile and Amphibian Projects Look Like?

Reptile and amphibian projects create, enhance, manage or restore habitat that benefits reptiles and amphibians, or use reptiles and amphibians and their habitat as a focus for conservation education.

Reptiles and amphibians can be found in almost all habitat types, from forests to deserts to grasslands. Many species use different habitat types at different times of the year or at different life stages. Specific habitat needs for reptiles and amphibians vary widely by species and their life stage. Some features provide multiple functions. For example, burrows provide some snakes with both nesting and hibernation habitat.

In general, reptile and amphibian habitat requirements include:

- **Foraging habitat** that supports the native vegetation or invertebrate/vertebrate prey they eat
- **Overwintering hibernacula** for colder climates

- **Movement corridors** between different habitats used by the species

Additional reptile habitat requirements include:

- **Nesting/egg-laying locations**, such as sunny, sandy areas for turtles
- **Sunning (“basking”) areas**
- **Cooler-temperature cover habitat**, which can be provided by rock piles or outcroppings, downed logs, brush piles or burrows

Additional amphibian habitat requirements include:

- **Aquatic habitat, damp areas or places to burrow** for staying moist
- **Fish-free wetlands, streams or woodland ponds** for egg-laying and tadpole development
- **Cover habitat**, which can be provided by vegetative cover, leaf litter, rock piles, downed logs, brush piles or burrows

Considerations for Corporate Lands

Projects implemented on corporate-owned lands have different circumstances and challenges to those on public lands, protected lands or wild lands.

Which types of corporate lands are best suited for reptile and amphibian projects?

The majority of corporate-owned lands will likely have opportunities for reptile and amphibian projects. Even the smallest native gardens can positively impact populations by attracting invertebrate food sources, while the largest parcels of land can support entire populations of reptiles and amphibians and provide all of the habitat components required for their life cycle needs.

Educational efforts about reptile and amphibian conservation are suitable to sites of all types and sizes, and can be tailored to fit the habitat and species complement of the site and surrounding landscape.

Addressing challenges

The corporate context presents certain challenges for implementing reptile and amphibian projects. Understanding these concerns and potential ways to overcome them can help your reptile and amphibian project succeed in the long term.

Concern	Response
<p>Handling, tagging and tracking of reptiles and amphibians, particularly imperiled species, may be restricted by some governments.</p>	<p><i>Partners who have permits to conduct such activities can assist with these efforts.</i></p> <p><i>State or national wildlife agencies can help with the design and implementation of projects, and may have tools available for landowners with protected species occurring on-site.</i></p> <p><i>Teams can also consider less intensive monitoring, that can still provide data of significant value for guiding management decisions – look, listen and take pictures.</i></p>
<p>Reptile and amphibian populations do not always respond quickly to habitat enhancement projects.</p>	<p><i>Seek other ways to maintain volunteers' excitement and investment in the project, such as providing educational programs and exploring what other wildlife species are already benefitting from the project.</i></p>

Concern	Response
<p>Employees or community members may not support projects that benefit dangerous, feared, and misunderstood species like snakes.</p>	<p><i>Live animal demonstrations, webcams of animals on-site and other educational efforts can promote better understanding of these species and their benefits to the ecosystem, economy and community.</i></p> <p><i>Teams can work with partners with expertise in handling, monitoring and educating about the species. Training employees and community members in safety measures for dangerous species can instill confidence and promote understanding.</i></p>
<p>Employees may have limited resources or time to dedicate to reptile and amphibian projects.</p>	<p><i>Build support from senior management by educating them on the environmental importance of the project, cost savings, public relations and community benefits.</i></p> <p><i>Partner organizations can often provide assistance with implementing, maintaining and monitoring reptile and amphibian projects.</i></p>
<p>Regulations may create limits on what on-the-ground activities can be carried out for reptiles and amphibians.</p>	<p><i>Planning meetings with local experts can help determine the scope of activities that can be carried out within the limits of regulations, or outside the sphere of regulations.</i></p>

Getting Started with Reptile and Amphibian Projects

For a project to qualify toward Conservation Certification, you must be able to answer “yes” to five questions.

1. Is the project locally appropriate?
2. Does it have a stated conservation or education objective?
3. Does it provide value or benefit to the natural community?
4. Have outcomes been measured and is there supporting documentation?
5. Does it exceed any pertinent regulatory requirements?

Conservation and education objectives

It is a requirement of Conservation Certification that reptile and amphibian projects be designed to meet one or more conservation objectives.

Objectives can guide the direction of the project, help motivate others to participate and provide a basis for evaluation.

The following are suggested objectives for reptile and amphibian projects. Your team may choose one or more of these objectives, or develop your own relevant objectives.

- Creating or enhancing habitat:
 - for a specific reptile or amphibian species
 - for a sub-group of reptile or amphibian species, such as pond turtles
 - on a large or landscape scale
 - that connects to other reptile or amphibian habitats – inside or outside the property boundaries, along movement corridors and across international borders
- Managing or protecting existing reptile or amphibian habitat to decrease a conservation threat, loss or disturbance
- Reducing or preventing transmission of reptile and amphibian diseases
- Increasing understanding of safe practices when dealing with reptiles and amphibians

- Addressing one or more research questions related to reptile and amphibian species
- Improving educators' capacity to effectively teach about reptile and amphibian conservation
- Using reptile or amphibian habitat to facilitate conservation education
- Contributing to a citizen science project focused on reptiles or amphibians, or to provide general awareness of conservation issues and education opportunities

The following strategies are recommended to strengthen the conservation impact of your project:

- Manage habitat to benefit one or more imperiled species of reptile or amphibian
- Engage in habitat management practices that maximize compatibility of the habitat for reptiles and amphibians
- Create, enhance or protect natural movement corridors between habitat types required by the target species or by different life stages, including habitats across roads or other man-made obstacles

- Protect existing quality breeding habitat used by reptiles or amphibians
- Maintain or create one or more ponds or wetlands free of fish to provide safe breeding habitat for amphibians
- Control invasive species that threaten reptiles and amphibians
- Create appropriate turtle nesting areas away from roads and other hazards, and in proximity to wetlands
- Be meticulous about sourcing native plants and other engineering materials
- Establish a baseline of reptile and amphibian species in the habitat, upon which desired outcomes can be based and evaluated
- Be located adjacent to or near an existing protected reptile and amphibian habitat and managed in alignment with that habitat
- Include artificial or assembled structures that meet a conservation or education outcome, such as basking structures or hibernacula
- Modify operations in order to prevent harm to or enhance habitat for reptiles and amphibians, either at the site level or as part of a company-wide initiative

- Provide educational demonstrations of reptile and amphibian species, such as live animal demonstrations or webcam feeds of snake dens, to increase understanding of these species and promote their conservation
- Reduce collection of reptiles and amphibians through physical barriers and community education
- Reduce the release of pet reptiles and amphibians into the wild through education
- Discourage relocation of reptiles and amphibians
- Discourage or prohibit the use of amphibian bait species for fishing on-site, in order to reduce disease transmission
- Provide training for employees or community members in reptile and amphibian identification and monitoring, habitat restoration and enhancement for reptiles and amphibians, etc.
- Raise awareness about or provide employees or community members with training in approaching, handling and choosing appropriate locations for installing habitat for dangerous or venomous species
- Engage in protocols such as cleaning of boots and gear to reduce disease transmission between populations of reptiles and amphibians, or from reptiles and amphibians to humans
- Include credible collection of data on reptiles and amphibians that is submitted to a pre-existing citizen science project
- Connect to larger local, regional and landscape-scale initiatives for reptile and amphibian conservation
- Provide opportunities for credible, scientifically-rigorous monitoring of reptile and amphibian species, including mark-recapture studies, by college students, professors and other permitted contractors or scientific professionals
- Be in place for at least 1 year, with a commitment of at least 3 years

Partnerships

Reptile and amphibian projects implemented on corporate lands can benefit from partnerships with groups that have established conservation or education objectives related to reptile and amphibian conservation. A team can work with partners for help with the design, implementation or monitoring of its reptile and amphibian project.

Many partners may also be able to provide educational opportunities for employees and community members, such as live animal demonstrations of reptile and amphibian species by local wildlife rehabilitators or nature centers, safety training related to dangerous or venomous reptile and amphibian species by a state wildlife biologist, and training in identification and monitoring of reptile and amphibian species by a local naturalist.

In addition, partners may also be able to assist the team with leveraging funds for implementing and maintaining the project, and can help create links between the on-site project and other reptile and amphibian projects or conservation priorities in the region.

Resources

Your project may benefit from online or printed resources available for your region to support the design, delivery, maintenance and monitoring of reptile and amphibian projects.

Searches for “reptile” and “amphibian” in the Conservation Registry return over 100 projects implemented through WHC’s certification program. This is a great place to find inspiration for your project and see what others are doing in and around your location.

The following terms, in any combination, may be useful when searching online for items related to this theme:

reptile	tortoise	basking
amphibian	terrapin	hibernacula
frog	lizard	ranavirus
toad	crocodilian	<i>Batrachochytrium dendrobatidis</i>
salamander	herps	
tadpole	herpetile	
snake	herpetology	
turtle	herpetological societies	

Understanding the Application Process

Documentation

When applying for Conservation Certification, you will provide documentation of the planning, implementation, maintenance and monitoring of your reptile and amphibian project. The following is required documentation for reptile and amphibian projects; however, you may also submit additional supporting materials.

Map/image of the project area, showing the relative size and approximate location of the project (other relevant information can be shown in the map as well, but is not required).

Photographs or videos that depict the progress of the project implementation and management.

Maintenance plans that demonstrate appropriate activities that meet the needs of the habitat to fully support the target species and support the conservation and education objectives.

Baseline data that provides a biological baseline upon which post-implementation monitoring can

be based and used to evaluate the progress of the project and determine next steps. For reptile and amphibian projects, baseline data should be gathered on reptile and amphibian populations on the property. It can be as simple as a presence absence survey using a checklist of reptile and amphibian species in the area. Higher quality baselines will incorporate more detailed information such as the number of individuals observed for each species, locations of species observations, rarity or threatened/endangered status of each species, observed signs of malformations or disease (particularly in amphibians), evidence of breeding and recruitment, and phenological data like frog calling intensity. Higher quality baselines will also incorporate surveys in multiple seasons to capture seasonality of species observances.

Monitoring logs that show the frequency, type, and results of monitoring of the project, whether in an informal manner such as a “look, listen, and take pictures” approach, or in a scientifically rigorous manner such as with frog calling surveys.

Application questions

As you complete the application online, you will be asked the following questions about your reptile and amphibian project. These questions will help us understand and evaluate your project.

	Question	Why this question is important
Overview	Does the project target a specific species or a group of species?	<i>This provides us with a description of your project to allow us to assess it.</i>
	Name the group of species being targeted and list several of the species in this group (common or scientific names).	
	Name the species being targeted (both common and scientific names).	
	What plants or structures have been added or maintained to benefit the species?	
	Briefly describe what activities are taking place to address the targeted species.	
	Upload photos showing the reptile and amphibian project.	
	When did on the ground work for the project begin?	
Objective	What are the project's conservation objectives?	<i>Having a conservation objective is a requirement for certification.</i>

	Question	Why this question is important
Habitat and Life Cycle Needs	Which of the major habitat and/or life cycle needs does your project address for the targeted species?	<i>Certain conservation actions are very valuable to the target species.</i>
	What plants or structures have been added or maintained to benefit the species?	
	Describe how the plants or structures address the habitat and/or life cycle needs.	
	Upload documentation of the plants or structures that benefit the species.	
Design of New Features	Have you added new plants or structures?	<i>Additions and expansions of your project since previous applications for recognition signify increased habitat value.</i>
	Did specific design or placement considerations maximize the benefit of the new plants and structures for the targeted species?	
	Upload documentation of the specific considerations.	
Species Management	List the steps taken to implement or maintain the reptile and amphibian project.	<i>Appropriate management policies and practices are also important to the target species.</i>
	Provide a timeline of the completed activities such as maintenance, implementation, population management, etc.	
	Upload documentation of these activities.	

	Question	Why this question is important
Monitoring	Was baseline data collected for this project?	<i>Monitoring is essential to understand the impact of the project and to be able to adapt the project develops.</i>
	Explain the types of baseline data collected.	
	Upload the baseline data.	
	Select each type of monitoring that is being carried out.	
	List each type of monitoring, including the frequency and list any plans or protocols used.	
	Upload the monitoring protocols, if applicable.	
	Upload the monitoring data and any analysis, if applicable.	
	Provide a brief summary of results from monitoring.	
	Evaluate the success of the project. If there were any concerns, what are the plans to address them in the future?	
Employee Participation	Do employees actively contribute to the project?	<i>Employee participation can strengthen a project and secure its future.</i>
	How many employees actively contribute to the project on a regular basis?	
	Describe how employees are involved in this project.	
	How many employee hours were spent on the following activities each year?	

	Question	Why this question is important
Other Participants	Do any groups or individuals outside of your company actively contribute to the project on a regular basis?	<i>It is not always possible to recruit outside groups to a project. Conservation and education partners can strengthen a project and provide different audiences to use it for lessons or recreation, thus broadening its reach.</i>
	Select the types of groups.	
	List the names of the groups you work with.	
	Describe their involvement in this project.	
	How many hours were spent by the groups on the following activities each year?	
	If you work with a reptile and amphibian specialist and have a current letter of support from them, upload it here.	
	List additional sources of technical advice (e.g. website, guidebook, etc.) and describe how they were used.	
Regulatory Requirements	Are any aspects of the project done in relation to regulatory requirements?	<i>Going beyond compliance is a requirement for certification.</i>
	Explain how the project exceeds requirements.	
Connectivity	Does the project connect with other reptile and amphibian projects on neighboring land?	<i>Connectivity on-site and across fence lines helps to decrease fragmentation, one of the leading causes of habitat loss.</i>
	Describe how the project connects with the other reptile and amphibian projects.	

	Question	Why this question is important
Alignment	Does the project align with any larger scale initiatives? (e.g. corporate strategy, regional conservation plan, migratory pathway, watershed plan, etc.)	<i>Aligning conservation efforts with large-scale conservation plans and other regional conservation initiatives allows a site-based activity to support a landscape-scale objective.</i>
	Is the project part of a corporate level commitment to reptile and amphibian conservation?	
	Upload documentation of your corporate commitment to reptile and amphibian conservation.	
	Does the project align with an existing conservation plan or other large scale initiative?	
	List the conservation plans or other large-scale initiatives the project aligns with and provide website links, if available.	
	How does your project align with these large-scale initiatives?	
Existing Certifications	Does this project have third party reptile and amphibian certification?	<i>Other certifications or recognitions illustrate strong efforts and commitments.</i>
	List the certifications and provide a website link if available.	

Content development for Conservation Certification

To inform the development of Conservation Certification, WHC analyzed the projects it was recognizing through its certification program to assess whether they were aligned with contemporary conservation and education priorities.

Following this assessment and using information from it, WHC convened Advisory Committees around conservation and education themes to develop the content that would guide practitioners and applicants in the future. This content is the basis for the Project Guidance and the online application process.

The following provided feedback on the initial draft of the Reptiles and Amphibians Project Guidance:

Rachel Gauza, Association of Zoos and Aquariums

Priya Nanjappa, Partners in Amphibian and Reptile Conservation; Association of Fish & Wildlife Agencies

Diane Parton, Warren County, Tennessee, Schools (Bridgestone BEECH Partner)

Stephen Spear, The Orianna Society

Wayne Weller, Ontario Power Generation

Brian Zarate, New Jersey Division of Fish & Wildlife, New Jersey Department of Environmental Protection

More information can be found about this process in the “Our Impact” section of wildlifehc.org under “Commitment to Transparency.”



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The WHC Strategy and Planning team can help you build a successful project by identifying needs, making connections with partners and resources, and providing strategies that meet business and conservation goals. Contact us today.

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Every act of conservation matters.

