

LEED v4 ND: Imperiled Species and Ecological Communities



Image source: naturesnetwork.org



The world is facing a conservation crisis. Dozens of species are imperiled, and there's a real risk that some will go extinct in the near future as we continue to lose more wildlife habitat every day. The good news is that many of these animals can be saved if we take action right away.

In this course, we'll discuss what actions can be taken to improve the chances of endangered species to survive for generations. In order to save Imperiled Species and Ecological Communities, we need to know why they're important and how they are threatened by human activity before figuring out ways in which people can help protect these species.

WHAT ARE IMPERILED SPECIES?

In general, an imperiled species is one that has been categorized as critically endangered or endangered in the **IUCN (The International Union for Conservation of Nature)** Red List of Threatened Species.

An organism can also be assigned to one of several other categories based on its conservation status: extinct (EX), data deficient (DD), not evaluated (NE), and insufficiently known (K).

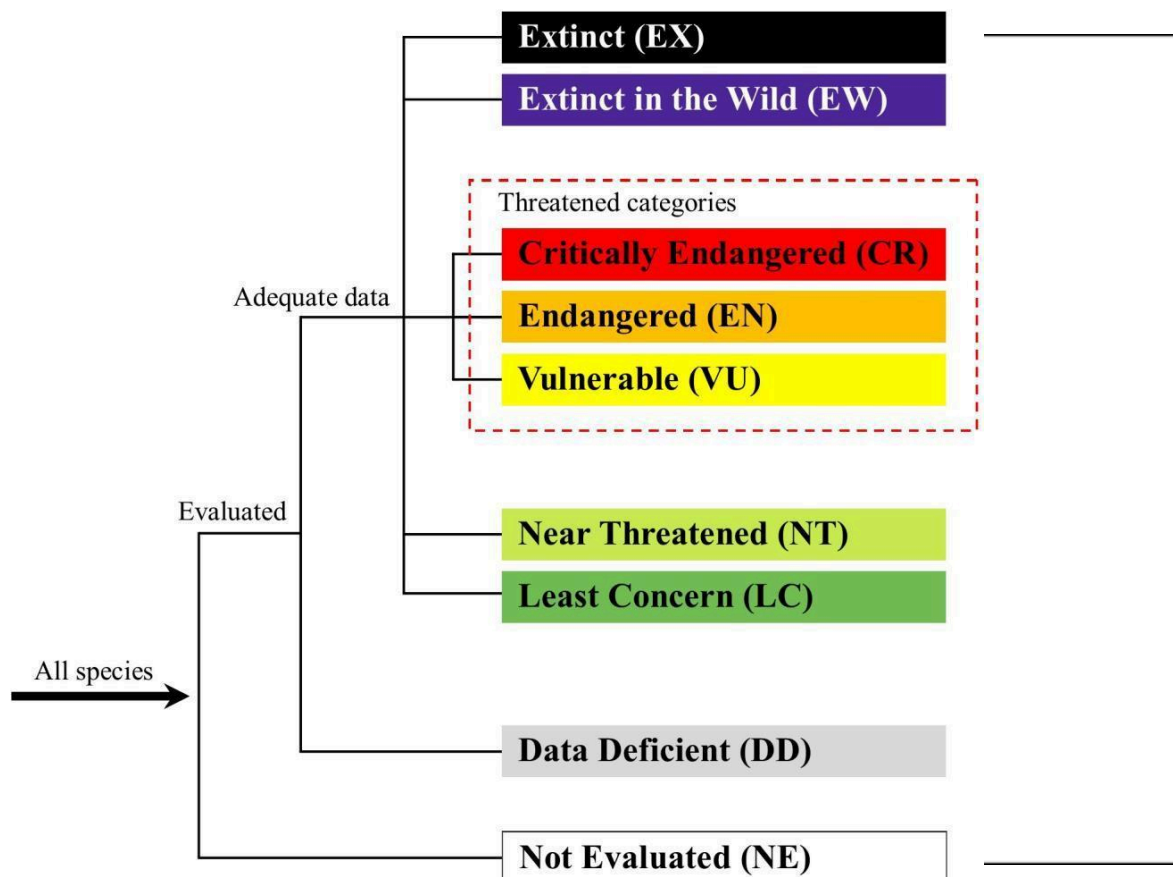


Image source: mozwild.com

🔔 However, IUCN is not the only responsible organization for identifying imperiled species. U.S. Endangered Species Act, NatureServe, State Natural Heritage Program as well other organizations have their own definitions and lists of imperiled species.

WHAT ARE ECOLOGICAL COMMUNITIES?

An ecological community is the plant and animal life that lives in a specific area (e.g., an island, lake, or forest) and relies on its local environment to survive.



Sequoia and Kings Canyon National Parks have an impressive elevation range from the low foothills to the Sierra Nevada peaks and provide habitat for a diversity of animals.

Image source: nps.gov

An example of this would be coral reefs which depend upon healthy water quality, clean sedimentation rates, varied ocean temperatures, etc. for their ecosystem to thrive.

If any one of these factors becomes disrupted, then there will be devastating consequences for all species living within that particular ecological landscape.

WHY ARE SPECIES BEING IMPERILED?

There are many reasons why species and communities might be imperiled. Some of the most common include habitat loss, invasive species, and climate change.

Most importantly, human-induced climate change is happening much faster than ever before and it may have devastating consequences for all species.



Polar bears across the Arctic face shorter sea ice season – Climate Change

Image source: climate.nasa.gov

The rate of global warming has increased year after year making it very hard for species to maintain a stable habitat. Imperiled species and communities are at a huge disadvantage to survive due to these rapid changes in climate, habitats, and other external factors.

This trend could be disastrous if we do not implement solutions soon. For example, as

temperatures increase coral reefs are dying because their metabolism slows down with higher water temperatures and this makes them less able to defend themselves against pathogens associated with warmer waters.



Reef fish shelter beneath a coral outcropping on Benham Rise in the Philippines.

Image source: oceana.org

Coral reefs disappearing from our planet may trigger other ecological cascades, such as the loss of marine life overall. Without reefs, fish and other animals would have no refuge to protect themselves from predators.

In this section, we will provide our independent perspective and interpretation of the prerequisite requirements beyond what is covered in the credit language to help project teams comply with them.

LEED v4 ND: Plan Imperiled species and ecological communities prerequisite mandate projects to meet certain criteria to conserve imperiled species and ecological communities.

The prerequisite requires consulting with the state Natural Heritage Program and state fish and wildlife agencies (or local equivalent for projects outside the U.S.) to determine if critical species or ecological communities are to be found on the project site because of the presence of suitable habitat nearby occurrences:

1 - Species listed as threatened or endangered under the U.S. Endangered Species Act or the state's Endangered Species Act

The Endangered Species Act was created in 1973 to protect ecological communities that were put at risk because they were composed primarily of endemic plants and animals found only within a certain geographical location. This act prevents these species from becoming extinct and regulates the import of any other organism that is found only within a specific geographic area.

The Endangered Species Act was created with two goals:

The first goal is for the United States government to monitor how many populations have dwindled towards extinction due to commercial use or exploitation; while trying their best so no other population disappears ever again.

The second goal is protecting these areas from development and construction projects that would destroy their habitat or natural resources further leading them.

Species identified as threatened or endangered due to different reasons including, but not limited to, habitat destruction or modification, overutilization of a species for commercial purposes, disease, predation by nonnative organisms, or climate change.

2 - Species or ecological communities classified by NatureServe as GH (possibly extinct), G1 (critically imperiled), or G2 (imperiled).

NatureServe is a non-profit conservation organization whose mission is to provide the scientific basis for effective conservation action. NatureServe and its network of natural heritage programs are the leading sources of information about rare and endangered species and threatened ecosystems.

IUCN categories	NatureServe categories	Rank	Priority
CR – critically endangered	G1 – critically imperiled	1	High

Image source: [researchgate.net](https://www.researchgate.net)

What is G Rank?

NatureServe uses a ranking system commonly known as G Ranking to describe the degree of importance of a species needing protection. The above table shows NatureServe categories and corresponding IUCN categories (as we have earlier mentioned) side by side to give you an idea of both organizations' grading systems.

G1 Rank (critically imperiled)

It is a very high risk of extinction or elimination due to its very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.

G2 Rank (imperiled)

Imperiled at high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

3 - Species listed as threatened or endangered specified under local equivalent standards (in areas outside the U.S.) that are not covered by NatureServe data.

There may be a list of species that are threatened but not included in the NatureServe listing. If the local equivalent standards of NatureServe (for international locations) list these species as threatened or endangered, they have to be conserved as well.

Just because a species isn't listed by Nature Serve doesn't mean it's not under threat at all, there may be just that experts don't know about its plight yet (or haven't had time to fully investigate). It also could be endemic only to a certain part of the world and not be listed by NatureServe or any other conservation organization.

Here are a few examples of imperiled species that may not be on the list of Nature Serve since the animals are not native to the continent of North America:

- Asian elephants (Indian subcontinent)
- Bornean orangutan (Borneo island, Indonesia)
- Southern rockhopper penguin (subantarctic islands in the southern hemisphere).

If the consultations are unconvincing and site conditions suggest that endangered species or ecological communities may exist, project teams should conduct biological

surveys using agreed methodologies during suitable seasons to determine if such species or communities exist or are likely to exist on the site.

PREREQUISITE COMPLIANCE

If the consultation and any necessary biological surveys determine that no endangered species and endangered communities exist in an area, then prerequisite requirements are met.

However, if the site has any affected species or ecological communities, then projects are required to meet either of the following two options.

Option #1

The first option projects can follow is complying with an approved habitat conservation plan under the U.S. Endangered Species Act (or local equivalent for projects outside the U.S.) for each identified species or ecological community.

An approved habitat conservation plan under the U.S. Endangered Species Act is a plan that has been determined to be likely to provide significant conservation benefits for listed species.

Because it provides a large-scale approach to conservation, a habitat conservation plan may be more flexible in meeting the needs of species and ecological communities.

An example of an approved plan is the Sonoran Desert Conservation Plan, a regional plan that includes identifying species-specific conservation actions and implementing those actions effectively.

The plan specifically addresses topics such as

- Species that are a concern for the area and their threats
- Habitat connectivity in relation to species of concern
- Conservation objectives related to listed species.

The plan should be designed so it can be easily updated, which would allow us to adjust conservation strategies over time as needed. The plan should specifically discuss the following:

- Threats that can reasonably be expected to affect any of the species in the plan

- How well we are doing at meeting conservation objectives for all listed species.

The given example of the Sonoran Desert Conservation Plan is not only a regional plan but also an example of a comprehensive approach to endangered species management and planning.

It takes into consideration the global nature of threats to imperiled species and ecological communities, including climate change, invasive non-native plants/animals, etc., that will require a sustained effort over an extended period to ensure protection.

Option #2

In case of a habitat conservation plan cannot be developed due to certain limitations the project team has, then the team can work with a qualified biologist or ecologist, a conservation organization, or the appropriate national, state, or local agency to create and implement a conservation plan that includes all of the following actions:

1. Identify and map the extent of the habitat and the appropriate buffer, not less than 100 feet (30 meters), according to the best available scientific information.

The map ideally should be developed to show the following:

- a. The location of any known imperiled species or ecological community;
- b. Any other habitat features, including but not limited to cliffs and rock outcroppings that need protection from disturbance;
- c. The extent of the buffer zone and its location relative to any roads, trails, power lines, pipelines, or rights-of-way for railroads and highways;
- d. Areas that are outside the current boundaries of conservation easements but still need protection from disturbance (such as a site slated for future development);
- f. The presence of water bodies in the area that may need protection from disturbance (including rivers, reservoirs, ponds).

2. If on-site protection can be accomplished, analyze threats from development and develop a monitoring and management plan that eliminates

or significantly reduces the threats.

On-site protection opportunities can represent significant conservation benefits and are often the first step in protecting imperiled species or ecological communities.

Threats from the development usually include:

- a. Agricultural uses that could degrade habitats through soil disturbance, pesticide use, herbicide application;
- b. Timber harvest practices such as timber culling (chopping down a tree for lumber), logging, and road-building;
- c. Habitat fragmentation from agricultural development, urbanization, or roads (e.g., the creation of new residential communities);
- d. Changes in hydrology or water quality, including pollution of lakes and rivers and other sensitive resources;
- e. Loss of habitat for threatened and endangered species within the area designated as a conservation easement;
- f. Direct disturbance to wildlife from human activities such as construction, logging, mining, etc.;
- g. Change to critical riparian habitats, including wetlands and other sensitive areas;
- h. Changes in fire regimes that could alter the natural communities of plants found on-site such as forests.

3. Protect the identified habitat and buffer in perpetuity by donating or selling the land or a conservation easement on the land to an accredited land trust, conservation organization, or relevant government agency.

Projects can protect the identified habitat by donating or selling the land to an accredited land trust, conservation organization, or relevant government agency.

The acquiring organization would then be responsible for preserving and protecting the important habitats through continued stewardship of that property. Here are a few organizations that are qualified to accept donations and purchases:

American Land Conservancy (ALC) works with landowners in Montana, Wyoming, Idaho, Oregon, and Washington to conserve private lands for the benefit of future generations. They protect diverse landscapes from mountain ranges to rolling hillsides that are critical habitats for animal species such as grizzly bears.

Another organization dedicated to protecting and conserving the land for future

generations is The Nature Conservancy (TNC). It works with private landowners and governments in all 50 states.

4. Sometimes, it is not possible to protect any portion of the identified habitat and buffer. In this case, quantify the effects by acres (hectares) or the number of plants and/or animals affected and protect from development in perpetuity habitat of similar or better quality on-site or off-site.

Protection can take the form of donating or selling a conservation easement to an accredited land trust, conservation organization, or relevant government agency. The donation or easement is expected to cover an amount of land equal to or larger than the area that cannot be protected.

EXAMPLE CASE

After interpreting LEED v4 ND Imperiled species and ecological communities prerequisite, it is now time to provide an example of how this might work in practice.

Let's assume a neighborhood project wants to select a development location. During their initial research, they found out that there are rare species on the project site that are listed with the U.S. Endangered Species Act, Natural Heritage Program, or their international equivalents.

In this case, the project should be compliant with:

1. Habitat Conservation Plan
2. Habitat Conservation Plan Equivalent Work

The first option (Habitat Conservation Plan) is straightforward and requires compliance with an approved habitat conservation plan under the U.S. Endangered Species Act (or local equivalent for projects outside the U.S.) for each identified species or ecological community.

However, choosing the second option (Habitat Conservation Plan Equivalent Work) will require developing an equivalent plan with a qualified biologist or ecologist, a

conservation organization, or the appropriate national, state, or local agency that includes multiple requirements to meet.

The project team tries to avoid development on the land by taking on-site protection measures. The team uses a map to document the species' existence and extent and clearly suggests required buffer zones not to interrupt the existing habitat.

Then, the team analyzes threats from development and creates a monitoring and management plan that eliminates or significantly reduces them.

The next thing team identifies habitats and the surrounding area (buffer) by donating or selling land or a conservation easement on the land to an accredited organization.

If any portion of the identified habitat cannot be protected in perpetuity, the project team will quantify how much area is affected and protect that many acres (hectares) of similar or better quality habitat on-site or off-site by working with organizations who donate conservation easements.

The donation or easement is expected to include an amount of land equal to or larger than the area that cannot be protected.

IMPORTANT ORGANIZATIONS DEDICATED TO HELPING ENDANGERED SPECIES

WWF (The World Wildlife Fund)

The World Wildlife Fund is the world's leading animal welfare organization. WWF, one of the most well-known organizations that aid endangered species, deserves a spot on our list. Since 1961, this well-known organization has been fighting for wildlife protection.

Their goal is to create a world in which humans and nature will coexist. As a result, they have had a significant effect on endangered species around the world and are actively

implementing policies and programs to positively impact global biodiversity and wildlife.

Their high-profile global efforts, such as animal adoption and Earth Hour, aim to protect endangered animals on land, in waterways, and in the oceans, such as elephants, tigers, lions, sea turtles, rhinos, chimps, dolphins, whales, and gorillas.

World Society for the Protection of Animals

The World Society for the Protection of Animals is a vital organization that aids endangered animals worldwide. The charity's core conviction is that animals deserve to be treated with dignity and kindness, and they strive to encourage people to treat animals more humanely.

Among their campaigns are ending bear dancing in India, shaping global UN policy on endangered species, and currently calling for a universal resolution to end all animal suffering. This endangered animal charity has rescued whales, lions, tigers, and bulls.

International Fund for Animal Welfare (IFAW)

The International Fund for Animal Welfare is one of the best-known organizations that aids endangered animals. IFAW works worldwide to save and rescue individual animals, mitigate human-wildlife conflict, and protect vital wildlife habitats.

They are also committed to the conservation of endangered animal species such as tigers, lions, and seals.

The International Fund for Animal Welfare (IFAW) is one of the best organizations that help endangered animals; they are also committed to landscape protection, political activism, marine conservation, and study and education about the value of saving the beautiful, but unfortunately endangered, animal species.

REFERENCES

- 1 – [LEED v4 ND PLAN: Smart Location and Linkage Imperiled species and ecological communities prerequisite](#)
- 2 - [Definitions of NatureServe Conservation Status Ranks](#)
- 3 - [National and Regional Conservation Partners: NatureServe](#)
- 4 4 - [The Sonoran Desert Conservation Plan](#)

