



**GREEN LEAGUE**  
Sport Alliance for the Environment

# Potential threats to the ecosystems when performing sports

by  **CARDET**



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***Climate change affects sport, but at the same time sport affects ecosystems. This presentation will explore how sport threatens ecosystems.***

# Activity

Think of 2 Potential threats to the ecosystems when performing sports.

Let's discuss!



# TERMINOLOGY

## **Biodiversity:**

“Biodiversity refers to the variety of living species on Earth, including plants, animals, bacteria, and fungi. While Earth’s biodiversity is so rich that many species have yet to be discovered, many species are being threatened with extinction due to human activities, putting the Earth’s magnificent biodiversity at risk.” <https://education.nationalgeographic.org/resource/biodiversity>

## **What is an ecosystem?**

An ecosystem is a geographical area where plants, animals and other organisms, as well as the weather and landscape, work together to form a bubble of life. Some natural ecosystems are aquatic and terrestrial ecosystems. The most diverse in the world is the huge Coral Triangle in Southeast Asia.

# TERMINOLOGY

**Direct impact:** An outcome directly attributable to a defined action or project activity; often also called a primary impact.

**Indirect impact:** Impact triggered in response to the presence of the project, rather than being directly caused by the project's own operations, often produced away from or as a result of a complex pathway; sometimes called secondary or induced impacts<sup>2</sup>.

**Sports event:** Any planned and organised sports competition held at a specific time and place.

Source: [BBOP Glossary - Forest Trends \(forest-trends.org\)](https://www.forest-trends.org/glossary/)

*Let's see the video!*



## *Direct threats:*

Many sports are played in or near aquatic ecosystems, in fresh or salt water, in lakes, rivers, seas or the ocean, some sports are beach volleyball, kayaking, etc. Other sports performed in terrestrial ecosystems such as desert, forest, grasslands, and mountain are hiking, sandboarding, cycling, buggies, etc.

In both ecosystems the threats are enormous. The sporting events held in the above ecosystems result in the distribution of biodiversity and wildlife, the change in soil morphology, the large amount of waste during sporting events, which may include plastic or food waste.

## *Indirect threats:*

In addition, many sports are played in stadiums or arenas rather than directly outside in the natural ecosystem.

However, it is important to note that these venues also interfere with ecosystems.

One of the threats is that many venues consume large amounts of water. For example, stadiums or artificial snow for alpine sports. An article by Ken Belson in the New York Times reveals the water numbers required for stadiums. For example, hockey games require about 12,500 gallons of water to produce ice. In addition, Kyle Bunds reported that:

*“If you put a stadium in the middle of a city and you have 80,000 people converging on the space for a day, the impacts on the environment are going to be very negative. There’s not much of an argument to be made that there isn’t an issue with waste, water and air pollution. The task is mitigating those negative impacts.”*

In addition, this excessive use of water for sports venues can create problems for local freshwater ecosystems.

Problems may include a decrease in water levels or drying out of wetlands. This can affect the wider catchment and not just the immediate surroundings of the venue.



# Exploring the threats

## *Habitat loss or modification*

- 1. Removing natural areas:** The removal/conversion of natural areas to create temporary or permanent facilities for sporting events, such as parking areas, hospitality areas, broadcast stands, etc. Impacts may include the dispersal or loss of natural inhabitants of the ecosystem through reduced access to food or water and reduced reproduction.
- 2. Crowds:** Large numbers of people participating or watching sports in open spaces can pose a threat to the environment by degrading the environment, destroying habitats and plants and disturbing wildlife.
- 3. Unintentional fires:** Immediate destruction and loss of habitat that may far exceed the boundaries of the site.
- 4. Behaviour of Athletes, fans, and other individuals:** All people associated with sport can contribute to a higher risk of fire due to unauthorised removal of wild vegetation or animals.

## *Disturbance or damage to wildlife*

- 1. Barriers and Fences:** In many cases, temporary or permanent barricades and fences are placed outside sporting venues to disperse and limit the movement, injury or loss of wildlife.
- 2. Electric cables:** In many cases, temporary or permanent electrical or non-electrical cables are placed outside sporting venues and resulted to the accidental deaths, injuries, or electrocution of wild animals.
- 3. Noise:** During sporting events (fans, athletes, public announcements, fireworks, etc.) noise and vibrations can disturb, disorient, change the behaviour of wild animals and affect their reproduction. For example, in the aquatic ecosystem, noise from machinery and people (such as boat engines and marina activities) can disturb marine life.

## *Introduction of alien invasive species*

- 1. Outdoor movement:** Any movement of athletes and spectators can spread seeds of invasive, non-native species into the ecosystem.
- 2. Sporting equipment:** Many sports equipment, such as clothing, footwear and other items, such as landscaping plants, that are moved to new locations could inadvertently release invasive alien species. Invasive species pose a threat to the survival of native plants and animals if they become established because they displace them in the food chain, compete for habitat, devour them or transmit new diseases.

# Case Study

## *From 2000 Sydney Summer Games to 2028 Los Angeles Summer Games:*

- The 2000 Summer Games in Sydney were the first Olympic Games to incorporate the International Olympic Committee (IOC) environmental pillar throughout the bidding process and through the completion of the Olympic Games.
- The Sydney Games featured many environmental considerations, such as clean-up of toxic sites, environmentally friendly construction of facilities, facilitating increased use of public transportation, and the introduction of recycling in Olympic facilities. Despite a partnership with Greenpeace international was formulated, the Sydney Games faced criticism. Critics from other environmental groups claimed that the Games were not truly environmentally friendly and accused the Games of greenwashing or making false environmental claims (Beder, 1999).
- The Los Angeles Games mark a new trend with the IOC on how they approach environmental sustainability and event legacies. IOC new policies on bidding cities aimed to align their sustainability and legacy plans with the host cities sustainability goals. This approach is intended to ensure that the Olympic Games serve as a medium to further not hinder sustainable development in the city. In Los Angeles, the organizing committee is planning to forward Los Angeles' Sustainable plan focusing on water conservation and mass transit options.

[Source: McCullough, Brian. (2010). The impact of sport and physical activity] on the environment.]



## *Depletion of water resources*

- 1. Water supply for the sports fields and for events:** The water extraction can change aquatic ecosystems and plant and animal habitat.
- 2. Water to make snow:** Increased sediment flux in water bodies affecting the species composition of aquatic plant and animal life.

## *Soil erosion and compaction*

- 1. Permanent modifications or venue improvements:** Due to the building of new infrastructure or upgraded sites, they may become prone to landslides and soil erosion.
- 2. Temporary facilities:** The construction of parking lots, broadcast units and other facilities and the trucks and heavy equipment for building them, can contribute to the loss of native plants as well as compaction and soil erosion.
- 3. Soil natural areas removal:** Removing soil to create sports fields in natural areas can result in the loss of plants and animals that live in the soil.
- 4. People movement:** Soil erosion, especially near riverbanks, steep slopes and coasts.

# Case Study



## Indian Premier League (IPL) cricket matches:

*In 2016 a major sports event was impacted by water shortages, and it was ordered by the High court to move the date because of the drought. In many parts of India there was a lack of water due to high levels of drought. The court had to change the matches because of the high amount of water used to prepare the stadiums.*



# *Pollution*

- 1. Chemicals, fuels, oil:** Many poisonous or dangerous chemicals are used in sports grounds, the use of pesticides, fertilizers are mismanaged and during sports performances there are water leaks or sewage spills. Also, during snowmaking, the use of sewage, salt, chemicals, and paints pollutes, damage or lose natural wildlife habitats and aquatic ecosystems.
- 2. Waste:** Litter left behind (rubbish, balloons, etc.) can harm wildlife or cause death by ingestion of litter, suffocation, or suffocation from litter.
- 3. Solid waste:** Improper disposal of waste in unauthorised or undesignated waste management facilities can cause damage to terrestrial and marine ecosystems. By causing run-off and discharging pollutants into groundwater, surface water and soils, waste delivered to landfills that are poorly managed can have adverse effects on aquifers and other natural environments, reducing the suitability of habitats for plants and animals. In addition, emissions from landfills have an indirect impact on biodiversity by accelerating climate change.

# Case Study

## The case of Qatar World Cup 2022:

*The 2022 World Cup in Qatar, according to FIFA, will be "a fully carbon-neutral event". After the event comes to an end, the carbon footprint calculations will be presented.*

*Is the World Cup being held in Qatar "totally carbon-neutral" or does it have a tell-tale hint of greenwashing?*



## *Climate change and unsustainable sourcing*

- 1. Using non-renewable energy sources:** In sporting events, the use of non-renewable energy sources releases greenhouse gases, which indirectly affect biodiversity through their impact on climate change; the impact of emissions and air pollution on wildlife.
- 2. Supplies and services:** Choosing products, materials or services that are known to have adverse impacts on biodiversity or that are not produced or provided in a sustainable manner, such as:
  - Single-use plastics,
  - Timber and wood products from unsustainable forestry operations,
  - Food and materials (such as cotton) from unsustainable agricultural production,
  - Fish and seafood from unsustainable fisheries,
  - Plant or animals' products that are not following the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) regulations.

# Case Study

## Alpine World Ski Championships:

*In 2019 the Alpine World Ski Championships became the first climate-neutral competition. In order to minimize the carbon emissions, the organizers used solar panels, electric vehicles, battery storage facilities and charging infrastructure. By that action, it was estimated to save 1,000 tons of carbon dioxide.*





*Can you think of any sports that threaten ecosystems?*

*Let's split into groups and discuss!*







**GREEN LEAGUE**  
Sport Alliance for the Environment

“The Earth does not belong to us: we belong to the Earth”.  
Chief Seattle



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