The Sports Impact Report

The environmental impacts of **9 sport practices & 31 experience profiles**

2025 - STUDY RESULTS



in collaboration with SPORT 1.5

DECATHLON

Preface



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Sport is essential for human well-being. It improves physical and mental health, brings people together, and creates moments of joy. From daily jogging to international competitions, sport helps build strong communities and healthier societies.

Simultaneously, **sports and natural sites are already affected by climate change**. Rising temperatures make outdoor activities more challenging. For example, in winter sports, less natural snow forces resorts to use artificial snow, which consumes extra energy and water. Extreme weather events can also damage stadiums and training facilities, disrupting sports at all levels. Moreover, increased air pollution due to human activities harms athletes by affecting their respiratory health and overall performance. These environmental disruptions threaten the very existence of certain sports.

Even as climate change poses significant challenges, **the practice of sport has environmental consequences**. Traveling to events and training sessions **generates carbon emissions**. Building and maintaining sports facilities, producing sports equipment, and even the food served at events **use many resources and create waste**. These activities can also **harm local ecosystems and reduce biodiversity** by damaging natural habitats, thereby weakening their ability to absorb the future consequences of climate change and making them more vulnerable.

Measuring these impacts is the first step toward improvement. With clear data, we can identify the main areas for action and develop effective solutions. This approach will help make sport more sustainable for future generations while preserving the joy and benefits it brings to society. Decathlon and SPORT 1.5 evaluate the environmental impact of 9 sport practices.

This white paper and these measures aim to foster awareness and understanding of the impacts of our practices, an essential first step towards action among all sport stakeholders. This initial report invites dialogue, cooperation, and the reinvention of our practices to make them more resilient and responsible. While it is too late to prevent global warming entirely, it is not too late to limit its impact by reducing the greenhouse gas emissions.

Sport, therefore, has a strong interest in being a leading defender of the climate. Because **a healthy mind in a healthy body can only exist on a healthy planet.**



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The 9 explored sports



















Executive summary

This report presents a comprehensive and non-exhaustive analysis of the environmental impacts associated with nine popular sports practices (running, road cycling, urban cycling, football, hiking, skiing, swimming, fitness and golf), evaluating these impacts across 31 distinct athlete profiles and sports practice experiences. A sport practice refers to the complete set of actions a person engages in throughout a year related to their sport, from obtaining gear to training and competing, including associated travel. While this report focuses on France, the methodology and findings are designed to be scalable to other countries, provided that sufficient data is accessible.

While sport is crucial for individual and societal well-being, this study quantifies its significant carbon footprint, resource consumption, and potential harm to ecosystems. The study does not seek to establish a comparison of the environmental impact across different sports.

The first findings highlight that transportation consistently represents a major source of emissions across sports (an average of 52%), often outweighing the impact of equipment production and facility usage.

The report also highlights substantial variations in environmental impact depending on practice methods (e.g. frequency, intensity, location), athlete profiles, infrastructures used and equipment choices.

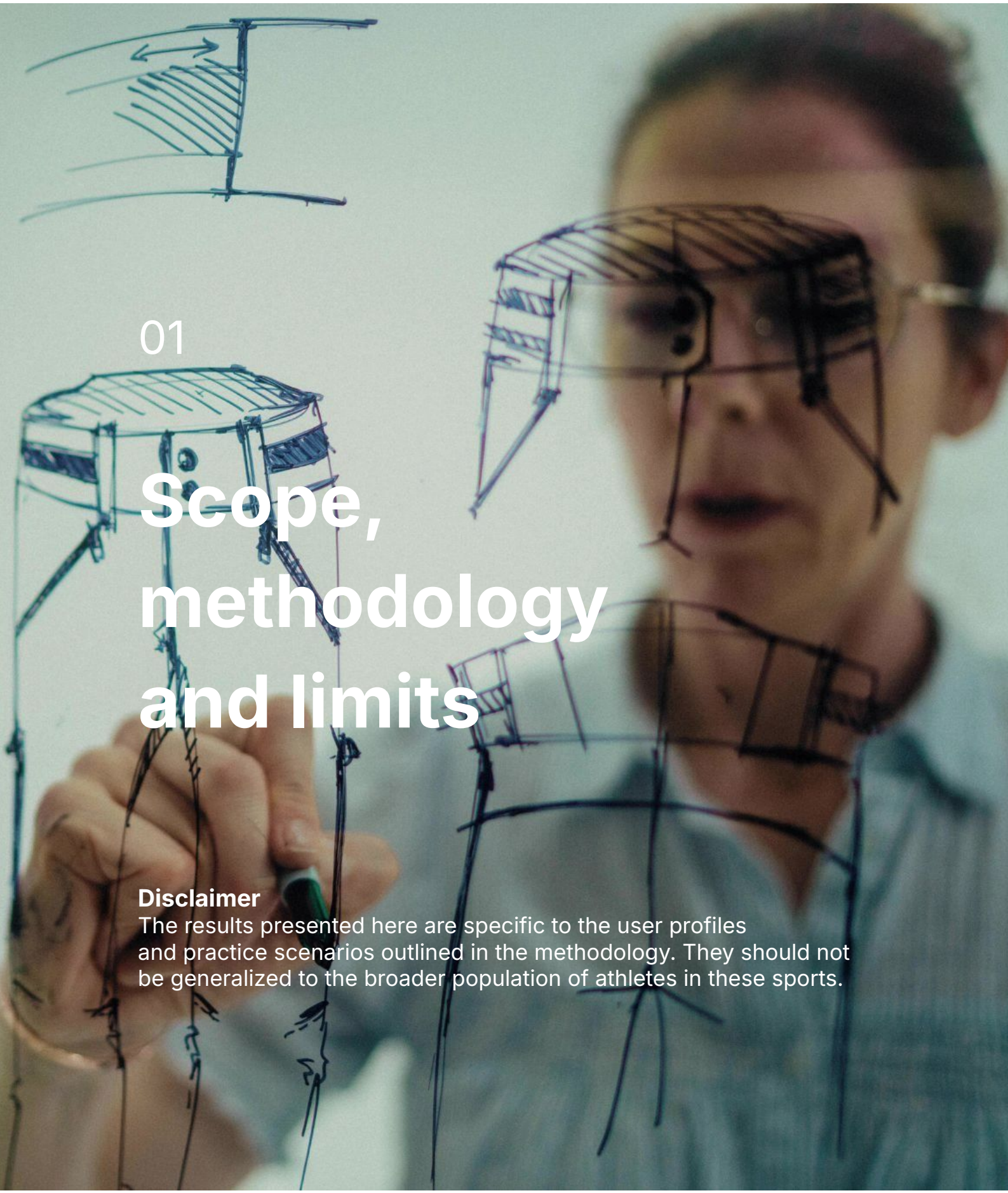
Other key findings reveal that the annual climate impact of sports ranges from 35 kg CO_2e for urban cycling to 905 kg CO_2e for golfing, attributable to their distinct practice behaviors. These impacts represent up to 1.7% (for urban cycling) and 65% (for golfing) of the maximum annual CO_2 budget of 2 tonnes that a citizen would need to emit to have a good chance of limiting warming to 1.5°C.

This research underscores the urgent need for the sports sector to adopt sustainable practices. It provides valuable data and insights for athletes, sports organizations, federations, and the sports industry to make informed decisions and implement effective mitigation strategies. The report recommends promoting sustainable transportation options, optimizing equipment usage and lifespan, conserving water resources, protecting biodiversity, and embracing circular economy principles.

Recognizing its role in the global transition, DECATHLON actively contributes to decarbonization efforts across the sports equipment sector. Between 2021 and 2024, the company achieved a 13% reduction in absolute carbon emissions. This progress was supported in part by the continued development of ecodesigned products, extending product life spans, and adopting circular economy models[1], key levers that help reinforce its long-term Net Zero strategy and alignment with the Paris Agreement.

By taking collective action, the sports community can minimize its environmental footprint and ensure a healthier, more sustainable future for both sportspersons and the planet.

[1] **Source**: DECATHLON Group 2024 Non-Financial Reporting Declaration, page 8



01

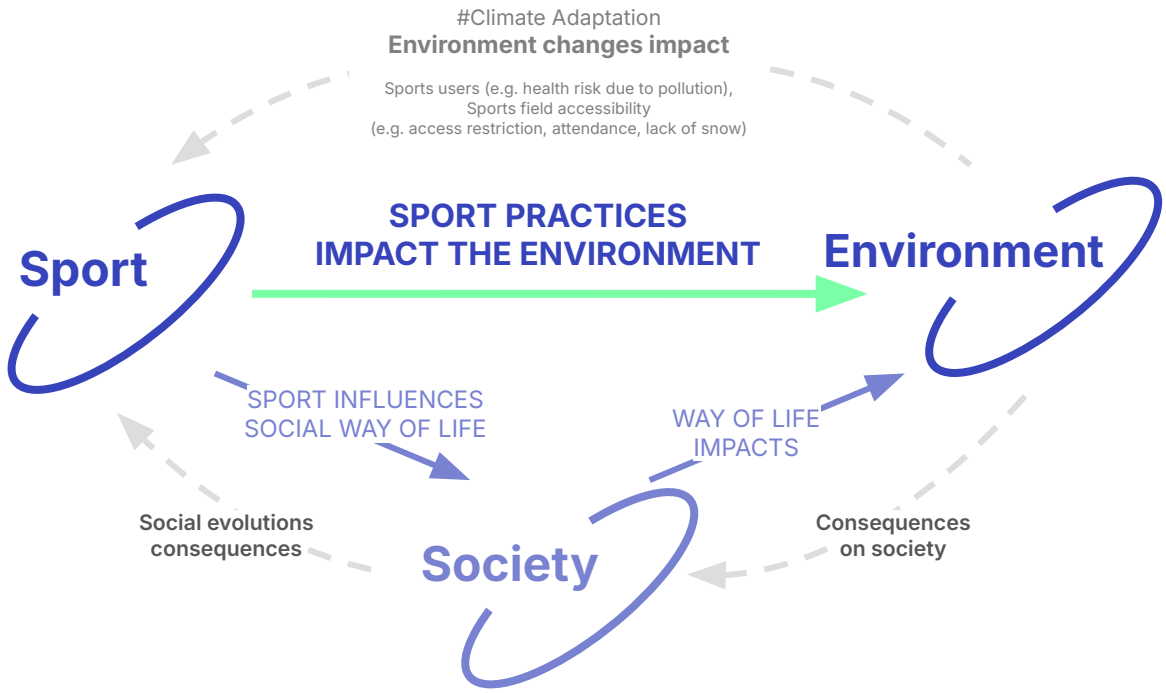
Scope, methodology and limits

Disclaimer
The results presented here are specific to the user profiles and practice scenarios outlined in the methodology. They should not be generalized to the broader population of athletes in these sports.

Scope of the study

Sport, society, and the environment are inextricably linked. To ensure a sustainable future for sports and foster mutual advantages, all three dimensions must be considered. Specifically, this study focuses on one of these connections: **the environmental consequences arising from the practice of sport.**

Interaction and interdependence between environment, society and sport



Source: DECATHLON and SPORT 1.5, 2025

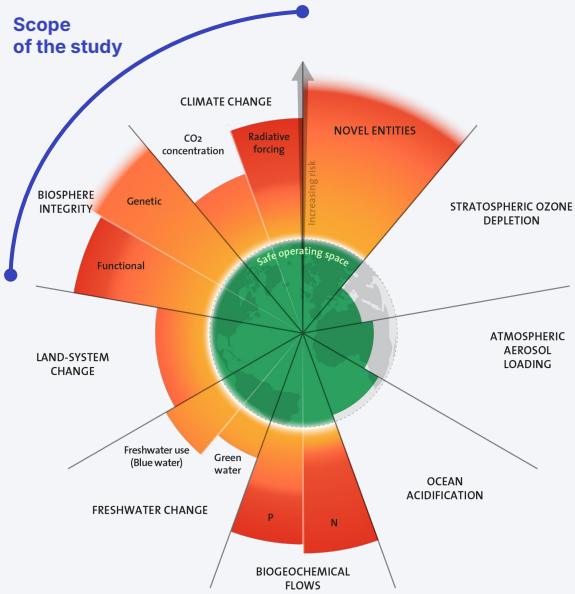
2/9 planetary boundaries studied

Planetary boundaries are a framework to describe limits to the impacts of human activities on the Earth system. Beyond these limits, the environment may not be able to continue to self-regulate. This would mean the Earth system would leave the period of stability of the Holocene, in which human society developed.

Two out of nine boundaries are analyzed in this study: **climate change** (quantitative assessment of the CO_2e emissions) and the **erosion of biosphere integrity** (qualitative assessment of the outdoor sport practice impacts).

The seven other boundaries are out the scope of the study: ocean acidification, stratospheric ozone depletion, biogeochemical flows in the nitrogen cycle, excess global freshwater use, land system change, chemical pollution, and atmospheric aerosol loading.

The 9 planetary boundaries



Source: Azote for Stockholm Resilience Centre, based on analysis in Richardson et al 2023

Objectives of the study

The report aims to:

1. **Quantify the environmental impacts of 9 sports**
   - Reveal variations in impact based on practice factors
   - Provide data to inform the development of mitigation strategies

2. **Raise awareness and focus stakeholder attention on key environmental impact areas in sport that require reduction, and urge adoption of sustainable practices in the sports sector by:**
   - **Promoting dialogue** and more responsible sports practices, encouraging athletes, sports organizations, and the sports industry to minimize their environmental footprint.
   - **Advocating for a sustainable future** for athletes and the planet, emphasizing the interconnectedness of human well-being and environmental health.

3. **Catalyze cooperation and inspire collaborative projects among all actors within the sports ecosystem** (including federations, clubs, athletes, businesses, and public authorities) to collectively reduce environmental impacts and co-develop shared solutions for a sustainable sporting future.

This report is not intended as a thesis or a thorough scientific investigation. It was constructed using insights from sports practice, standard carbon impact assessment methodologies, and the currently accessible data for each sport. Certain data points were estimated, and some approximations were necessary. The study does not seek to establish a comparison of the environmental impact across different sports.

Rather than discouraging sports, its intention is to provide clarity that facilitates conscious engagement and promotes the adoption of more sustainable sports practices.



Limits

When the access of data - mainly for transportation habits - were not available, certain parameters were based on expert estimations from DECATHLON. For instance, the swimming team indicated that wellness swimmers typically travel by car (60%) or public transport (40%). All assumptions are clearly documented for each sport in appendix.

Relying on specific surveys conducted by DECATHLON might introduce bias towards DECATHLON customer behavior or perceptions.

The analysis of infrastructure impacts does not cover land use and artificialization. This analysis primarily considers climate change and biosphere integrity.

However, the planetary boundaries are inherently interconnected, and excluding other boundaries, such as land system change, could lead to an underestimation of certain environmental consequences, particularly in relation to infrastructure development for sports.

Furthermore, the scope of this analysis did not extend to several other potential sources of environmental impact. These omissions include, but are not limited to:

- The environmental impact of food consumed by individuals related to their sporting activities outside of specific event catering
- Light pollution generated by sports facilities during evening or night use
- The footprint associated with the consumption of sports-related media (e.g., streaming, online content, print newspapers)
- The use of personal electronic devices for sports, such as connected watches or smartphones, across all practices
- The environmental footprint associated with extensive sports-related engagement and content on social media platforms.

The geographical perimeter is mostly France (except for football practice) but can be scaled to other countries if data are available for these countries (e.g., common ways to practice sport, typical transport modes and distances).



Methodology

Climate impact assessment

The climate impact of the 9 sports practices have been assessed using the same approach. Life cycle assessments - quantifying greenhouse gas emissions of sports - have been conducting for each sports:

- For each sport, one or several personae have been selected representing the main characteristics of a sport practice, grounded in Decathlon's insights into sports users. A total of 31 sport experiences are studied
- For each personae, a typical year of participation or user experience has been defined, converting physical flows (e.g., transportation, equipment purchases, energy use) into corresponding climate impacts
- The assessment considered five key categories: transportation, equipment, infrastructure, food, and event logistics

Data sources included national studies, DECATHLON's surveys, sport union information, DECATHLON expertise on practices and partner data, providing a comprehensive view of sports practices. To assess the environmental impact of all the products, DECATHLON implements the Product Environmental Footprint - PEF methodology[1]. Most of the emission factors come from the "Empreinte" database[2].

1 User experiences

2 Data collection

- DECATHLON Co-creation
- Existing studies
- Data bases

3 Modeling

4 Insights and key learnings

→ *NB: Results are limited to these specific user experiences and **do not represent a generic or average impact per sport.***

Other environmental impact assessment

A qualitative study was conducted through literature reviews and expert interviews to assess the **biodiversity impacts** and **water consumption** of the outdoor sports.



[1] **Source**: More information on the PEF methodology here
[2] **Source**: The "Base Empreinte" is ADEME's central reference database for calculating and understanding the environmental footprints of various activities and products.



02

Key figures

Carbon footprint

The climate impact of sport practices

This chapter focuses on key figures that shed light on the carbon footprint of the nine sports. To provide a comprehensive understanding, the CO_2 impact has been evaluated across several distinct dimensions:

The annual CO_2 impact per athlete: this figure estimates the total carbon emissions an individual generates by participating in a specific sport over a year, considering their typical practice frequency and habits. A range representing low to higher impact practices is calculated.

The CO_2 impact of a single day of practice per athlete: This metric looks at the emissions associated with one typical session of a given sport. The figures are related to the most popular way to practice each sport.

The estimation of the total annual CO_2 impact for the sport in France: This broader perspective takes into account the popularity of each sport, multiplying the annual impact per athlete by the total number of practitioners in France.er

Regardless of the sport, its environmental impact is undeniable, stemming from travel for training and competitions, equipment, infrastructure and facilities, and even food consumption. The annual climate impact of sports - for the most popular way to practice - ranges **from 35 kg CO_2e for urban cycling to 1,300 kg CO_2e for recreational active golfer**. This variation is driven by several key factors:

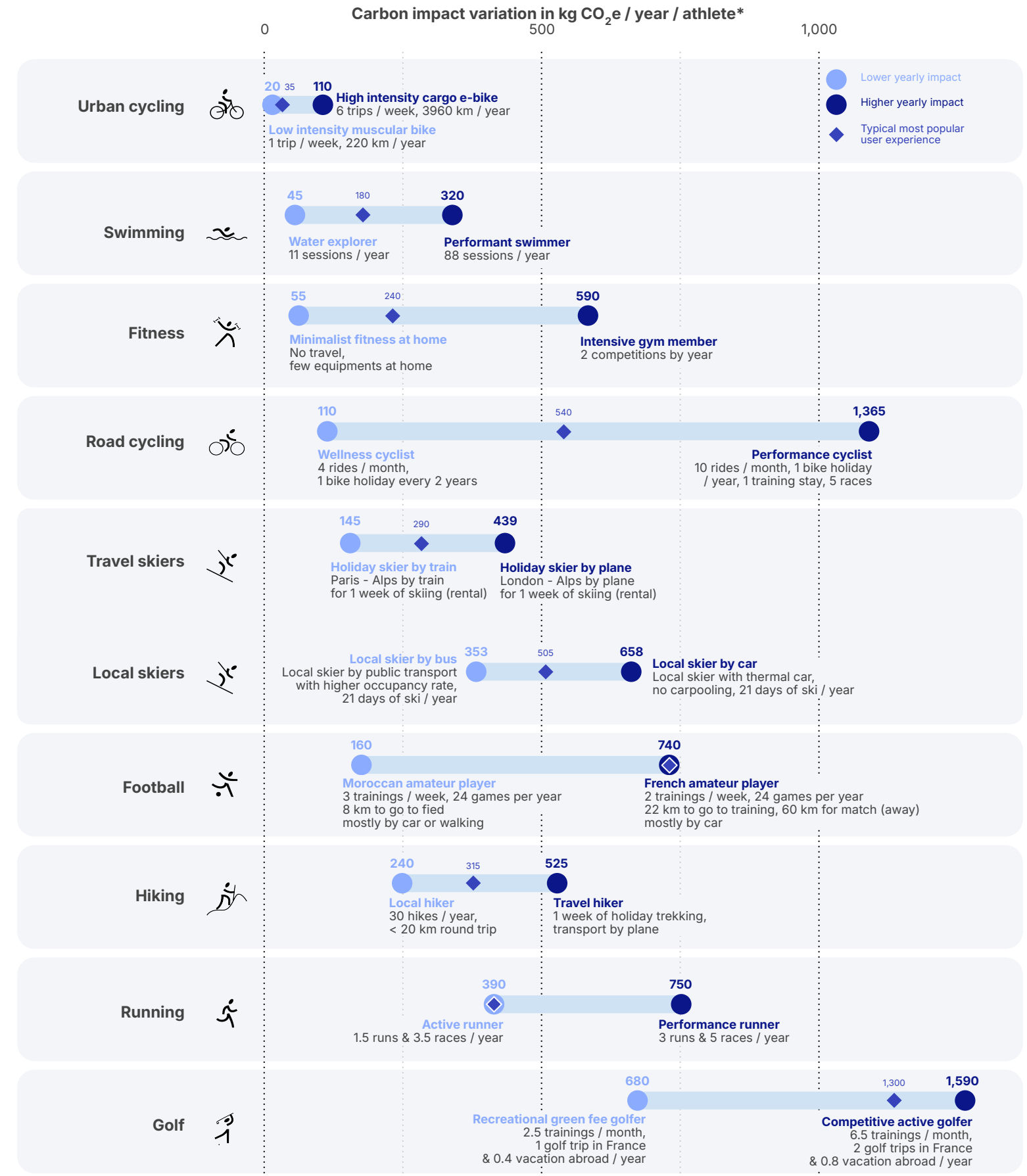
- **Type of practice**: frequency of practice goes from 7 to 200 days per year,
- **Car reliance for training**: certain sports, like football golf or hiking, frequently require the use of car transportation to reach the practice field,
- **Travel intensity**: competitions, training, and sports holidays often involve car or air travel,
- **Infrastructure dependence**: some sports require dedicated fields or buildings which increase the required energy and gas consumption,
- **Equipment turnover**: some sports demand frequent gear replacement (e.g., football, running), while others, like hiking, skiing, or cycling, have longer renewal cycles.

This report dives into the environmental footprint of different sports, breaking down the key reasons behind their impact. Valuable takeaways on how choices - like transport methods and gear consumption - can seriously shift CO_2 emissions.

Ready to rethink the way we play?

9300 kg CO_2e
is the average
carbon footprint
of a French person in 2019

What's the range?
Yearly CO_2 emissions in 9 sport practices compared

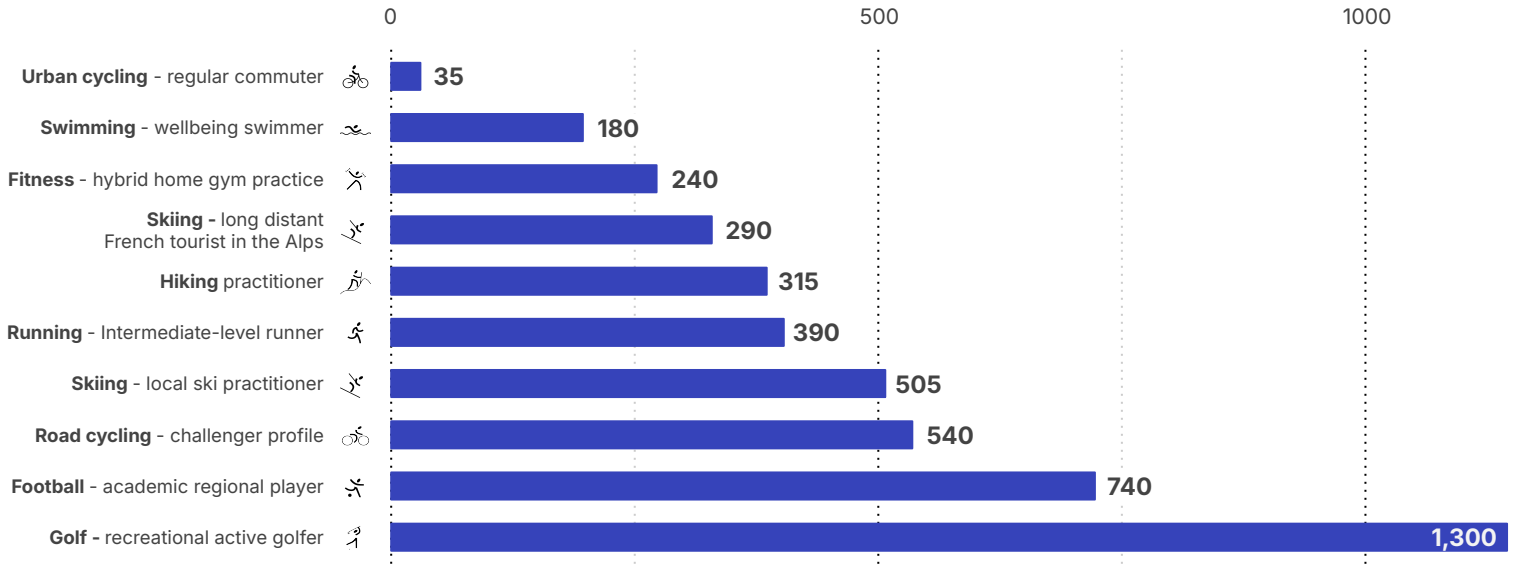


* Kilograms of carbon dioxide equivalent per year of sport practice per athlete

Source: DECATHLON, 2025

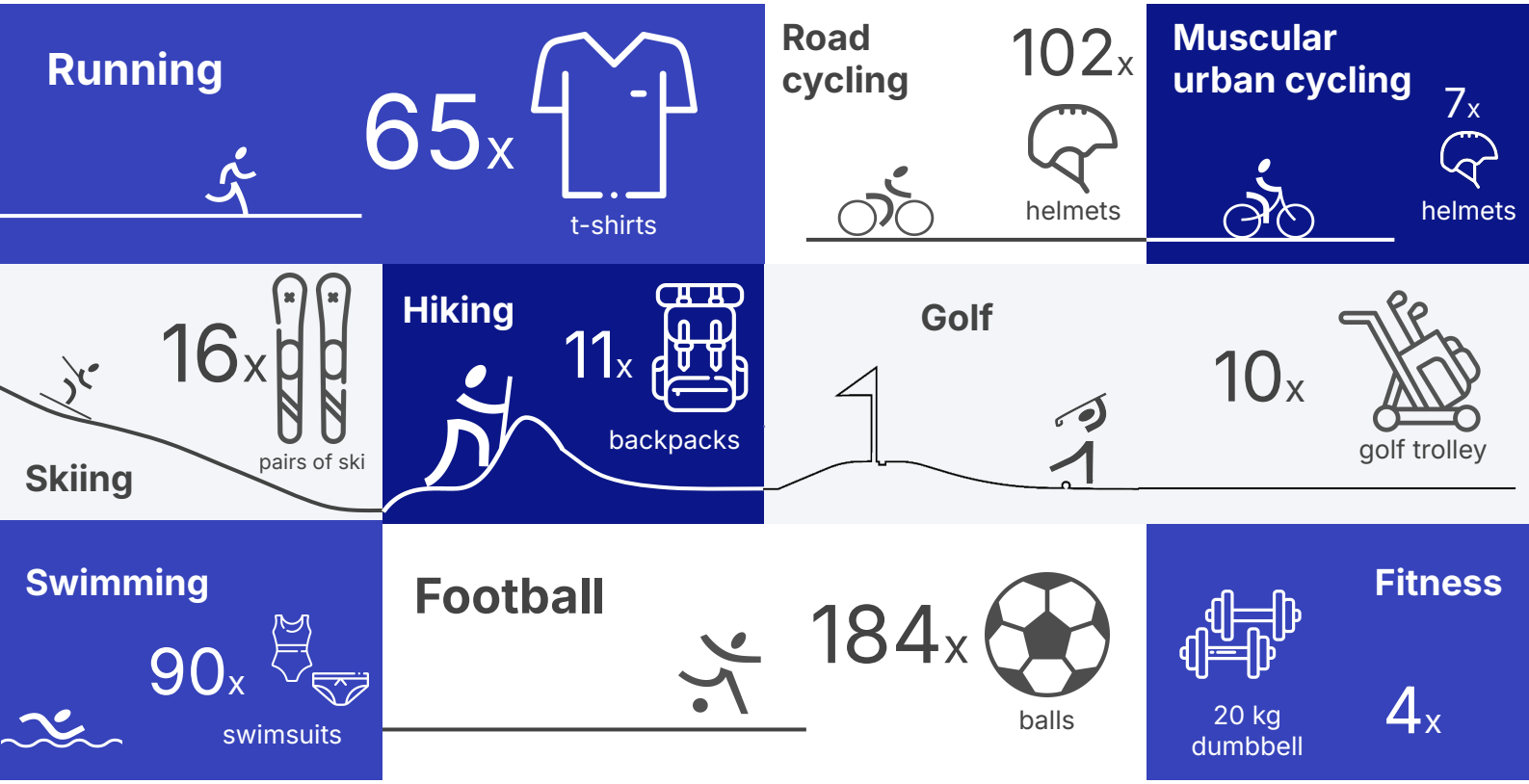
1 year of sport practice has a CO2 impact of...

Sporting sessions: a comparative look at yearly CO_2 emissions - kg CO_2e / year / athlete*



* Kilograms of carbon dioxide equivalent per day of sport practice per athlete
Note: For each sport, the displayed profile represents the segment with the highest total annual emissions (individual impact × number of practitioners).
Source: DECATHLON, 2025

For each individual sport, 1 year of practice per athlete has a CO2 impact equivalent to...



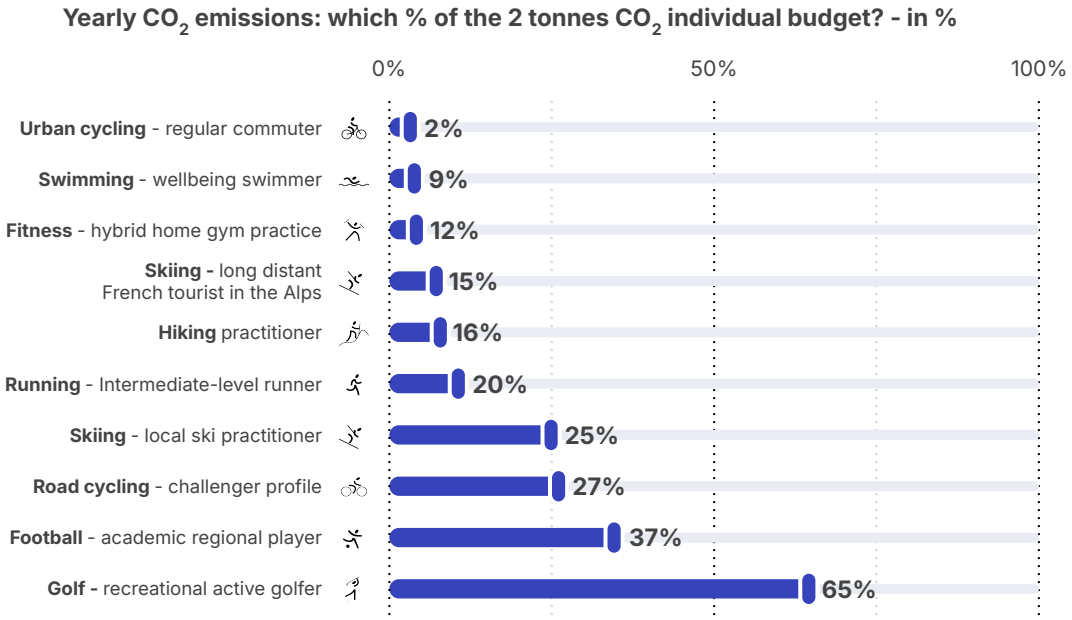
Note: For each sport, the displayed profile represents the segment with the highest total annual emissions (individual impact × number of practitioners).
Source: DECATHLON, 2025



Comparing sports' annual carbon footprint to the 2-tonne climate budget

To limit global warming to a maximum of 1.5°C, a crucial concept, aligned with the goals of the Paris Agreement (adopted in December 2015), is the **individual carbon budget**. Scientific consensus suggests that, on average, **each global citizen would need to emit no more than around 2 tonnes of CO_2 equivalent per year** to stay within a carbon budget offering a good chance of limiting warming to 1.5°C.

This 2-tonne benchmark, in relation to the aims of the Paris Agreement, underscores the significant emissions reductions needed for many in industrialized nations to achieve lower-carbon lifestyles and meet these global commitments. The graph below details and compares the annual carbon footprint of various sports against this 2-tonne budget.

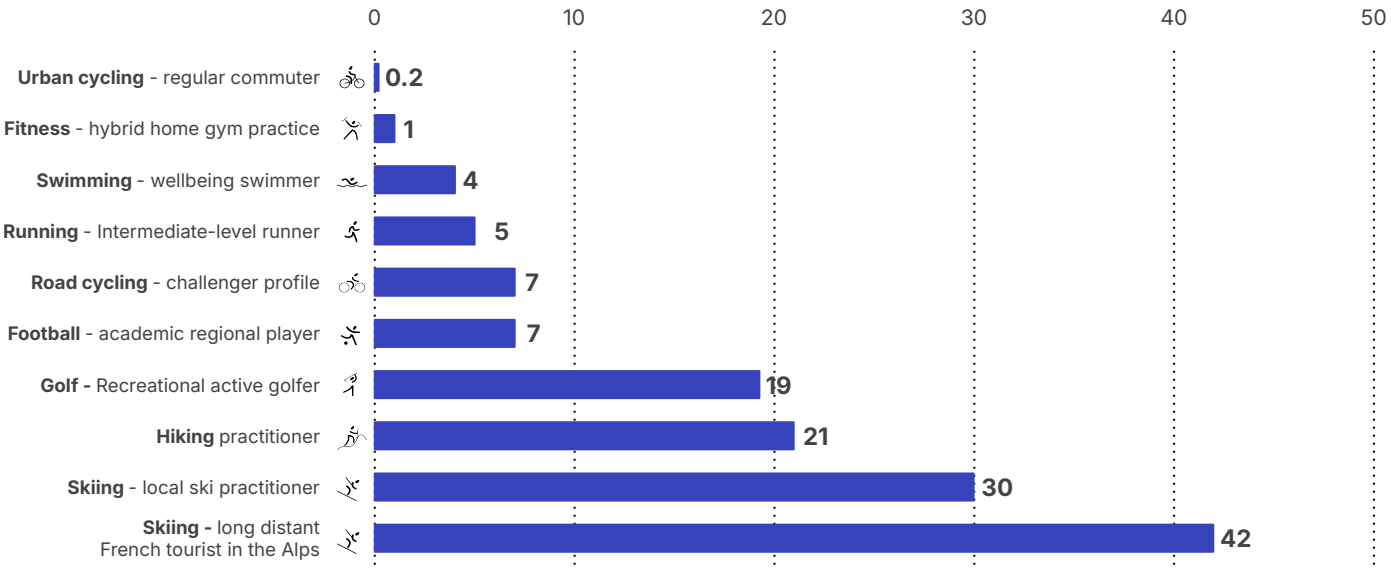


Note: For each sport, the displayed profile represents the segment with the highest total annual emissions (individual impact × number of practitioners).
Source: DECATHLON, 2025

1 day of sport practice has a CO2 impact of...

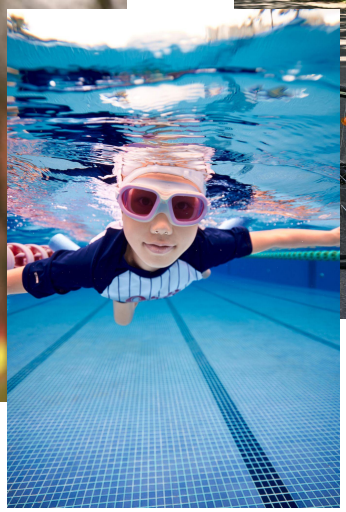
This section shifts focus from the total annual impact to the direct impact of a single session across nine different sports. By dividing the total yearly impact by the number of practice days, the environmental cost of each individual sport session is revealed.

Sporting sessions: a comparative look at daily CO2 emissions - kg CO_2e / day / athlete*



* Kilograms of carbon dioxide equivalent per day of sport practice per athlete
Note: For each sport, the displayed profile represents the segment with the highest total annual emissions (individual impact × number of practitioners).
Source: DECATHLON, 2025







Carbon footprint

Key figures per sport practice - yearly impact

Each sport has unique characteristics (frequency, transport distance, equipment, and infrastructure) that shape its environmental impact, influencing both its overall footprint and the distribution of that impact. The following figures represent the yearly CO2 impact of the most popular ways to practice each of the nine sport.



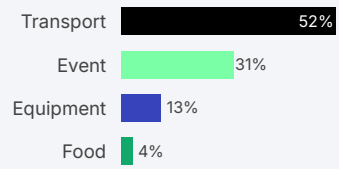
Active runner

74 run activities / year

800 km ran / year

~3 races / year

390 kg CO_2e

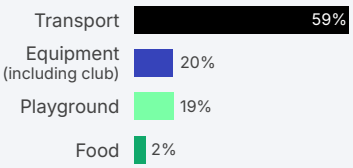


Football - French academic player

Training
2 per week
11 km: distance between home & playground (1760 km / year)

Games
24 per year
985 km travelled / season / person

735 kg CO_2e





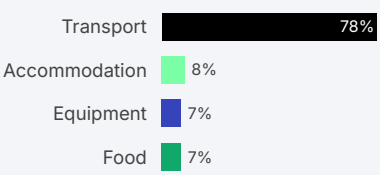


Hiking

Yearly practice: 5 one day hiking, 2 weekend hiking, 1 week of holidays

representing 1250 km / year in average for transportation

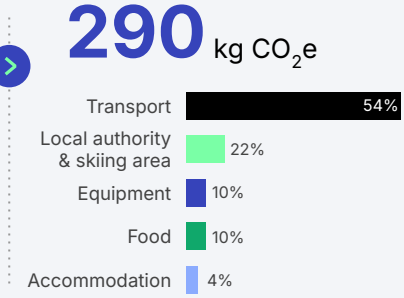
315 kg CO_2e

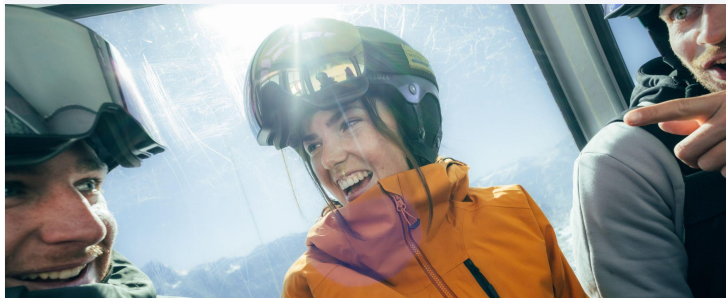


Skiing for holidays

1 week vacation for tourists coming in the Alps for 7 days, round trip of 1300 km, with renting ski equipment
(representing 45% of skiers in France)

290 kg CO_2e





Regular bike commuter

35 kg CO_2e

- Bike 35%
- Equipments 65%

3 times / week with a muscular bike
2h of physical activity / week

A bike and required equipment **saves the equivalent of its manufacturing CO_2 impact in 15 months** compared to a car and **pays for itself in fuel savings within 2 years** [1]

[1] Amortization of the initial carbon debt (manufacturing of the bike, battery, and gear) spans 14 to 15 months (1.16 to 1.23 years) across all regular bike-commuting and cargo profiles (1,320 to 3,960 km/year), when replacing trips made by a reference thermal car (0.22 kg CO2e/km — ADEME Base Empreinte).





Challenger road cycler

82 activities / year

- 5100 km by bike
- 2 cyclosportives
- 1215 km of transport mainly by car per year

540 kg CO_2e

- Transport 44%
- Event 35%
- Equipment 11%
- Food 10%

Wellbeing swimmer

44 activities / year

- ~620 km of transport per year

180 kg CO_2e

- Infrastructure 49%
- Transport 46%
- Equipment 5%





Recreational active golfer

- ~5.9 local session / month
- ~2,680 km of transport per year

1,300 kg CO_2e

- Meal & accommodation 4%
- Infrastructure 52%
- Equipment 9%
- Transport 35%

Hybrid gym member

- 3 sessions in the gym per week
- 3 sessions at home per week
- 990 km of transport mainly by car per year

240 kg CO_2e

- Transport 66%
- Playground 12%
- Equipment 20%
- Food 2%



Climate impact of sport practices summary

Understanding the environmental footprint of sport activities is increasingly important. The following diagram provides a concise overview of the carbon dioxide (CO_2) impact of nine different sports. It presents three key data points: the CO_2 emissions per typical session, the estimated annual CO_2 emissions for a representative level of engagement in each sport, and an estimated total number of sport participation numbers. The visual graph summary allows for a direct comparison of the environmental implications across nine popular sporting activities.

Climate impact of the most popular sport experience across 9 sports:
yearly emission (in kg CO_2e / athlete), daily sport session emission (in kg CO_2e / athlete),
estimation of the number of sportspersons in France (in millions)

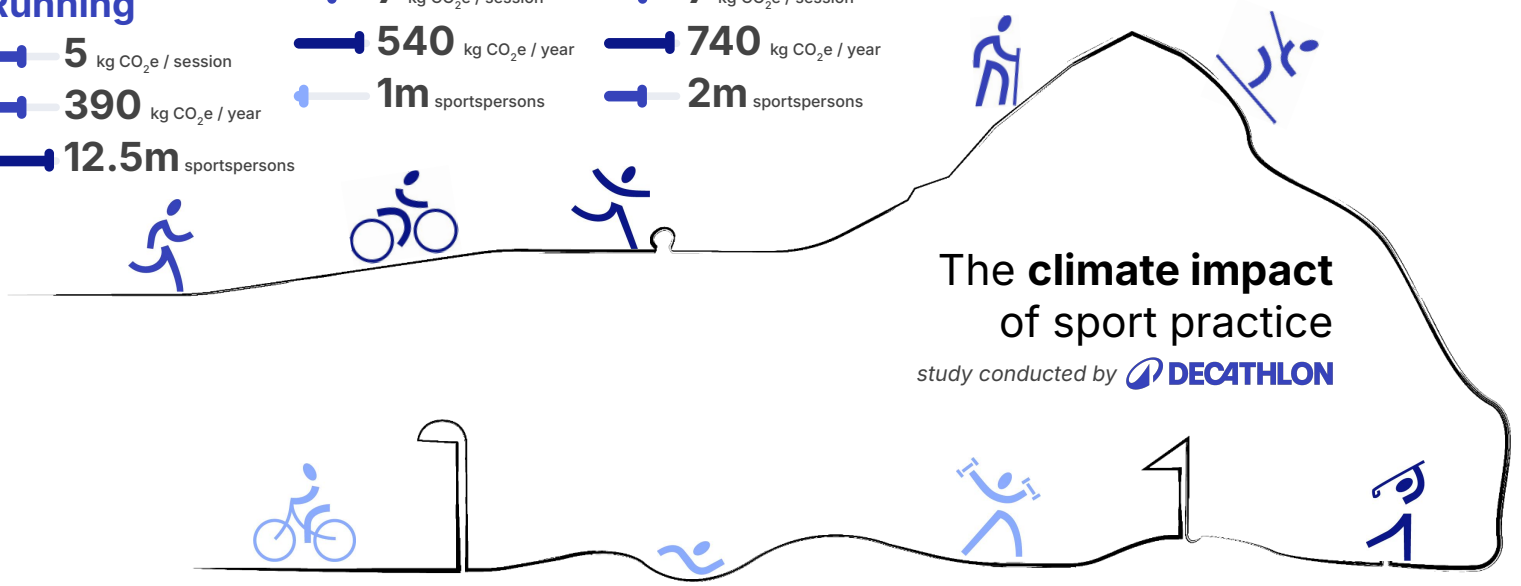
Running
- 5 kg CO_2e / session
- 390 kg CO_2e / year
- 12.5m sportspersons

Road cycling
- 7 kg CO_2e / session
- 540 kg CO_2e / year
- 1m sportspersons

Football
- 7 kg CO_2e / session
- 740 kg CO_2e / year
- 2m sportspersons

Hiking
- 21 kg CO_2e / session
- 315 kg CO_2e / year
- 27m sportspersons

Skiing
- 35 kg CO_2e / session
- 290 kg CO_2e / year
- 6.2m sportspersons



Urban cycling
- 0.2 kg CO_2e / session
- 35 kg CO_2e / year
- 0.8m sportspersons

Swimming
- 4 kg CO_2e / session
- 180 kg CO_2e / year
- 12.7m sportspersons

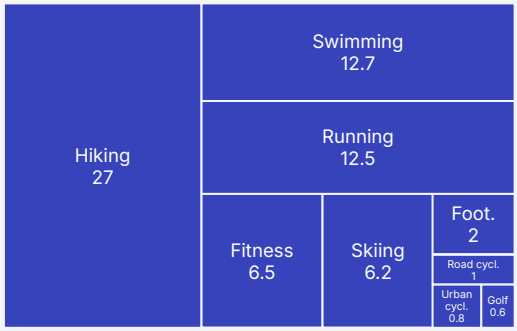
Fitness
- 1 kg CO_2e / session
- 240 kg CO_2e / year
- 6.5m sportspersons

Golf
- 19 kg CO_2e / session
- 1,300 kg CO_2e / year
- 0.6m sportspersons

The number of practitioners counts

The carbon footprint of each sport depends on the annual CO_2 impact of its athlete profiles (beginner, intermediate, high-performing) and their practice, the number of participants (0.6 to 27 million), and the distribution of these profiles. The lack of detailed data on profile distribution hinders precise calculation, consequently leading to greater uncertainty in the estimations. Thus, understanding the approximate volume of participants is necessary.

Estimated number of sportspersons in France (in millions)





03

Insights and learnings

Insights and learnings

What can we learn from these figures?

From the many figures and findings on the environmental impact of these nine sports, five key takeaways were identified.



The way a sport is practiced significantly affects its environmental impact. Certain choices can increase CO_2 emissions by several hundred times.



Transportation, with cars being a major contributor and often viewed as essential 'sports equipment', represents 37% to 78% of the overall carbon footprint of sports activities.



Sports equipment contributes to climate impact, with an average of 17% of the total sport practice impacts.



Sports infrastructure and facilities contribute to CO_2 emissions due to energy-intensive operations, construction materials or maintenance, and require water consumption.



Sport activities would not just impact the climate - they could also leave a mark on **biodiversity.**

Learning #1

The way a sport is practiced significantly affects its environmental impact. Certain choices can increase CO_2 emissions by several hundred times.

Regardless of skill level (beginner, intermediate, expert, or professional), the way one engages in sports significantly affects its carbon footprint. Three key factors can multiply the CO_2 impact of sports practice:

- **Travel to practice and competition sites: The distance covered to reach training or competition locations is a primary driver. This long-distance travel, often undertaken by car or plane, can be due to:**
  - Participation in regional, national, or international events
  - The search for "idyllic" or specialized practice locations
  - The pursuit of optimal weather conditions, such as athletes seeking warmer climates for effective training, especially during winter. These choices lead to high transportation emissions.
- **Mode of transport used:** The specific means of travel to reach practice or competition sites (e.g., walking, biking, public transport, train, car, or plane) directly influences emissions.
- **Equipment usage and renewal rate:** Depending on an athlete's habits and the intensity of their sport, specialized gear may be required and replaced more frequently due to wear, tear, or the demand for enhanced performance.

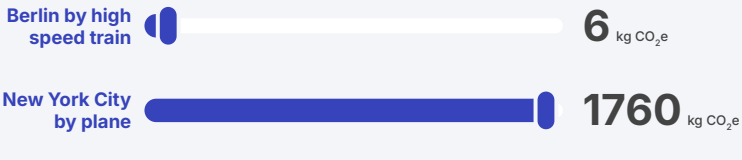
It is important to acknowledge that transportation choices (both distance and mode) are influenced by a complex interplay of factors, including the availability and accessibility of public transport, prevailing cultural norms around travel, and individual socio-economic circumstances.

3 examples illustrate the discrepancy of CO_2 impacts between different ways to practice sports.

Wise competition and transport choices matter

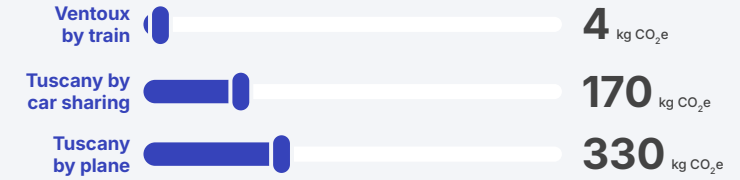
Paris - Berlin by train, a 285x lighter footprint than NYC by plane





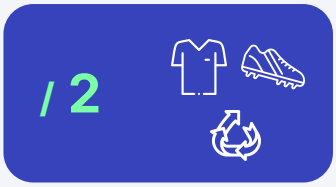
81x less CO_2e: Paris - Ventoux by train vs. plane to Tuscany

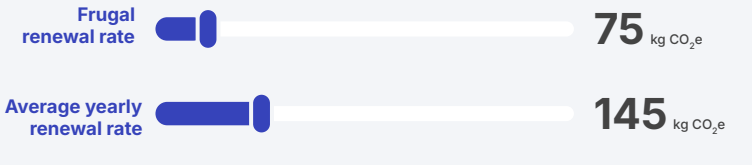




Take care of sport gear, choose durable or second-hand, rent when possible

Renewal rate of each items in football panoply divided by 2 (except balls)



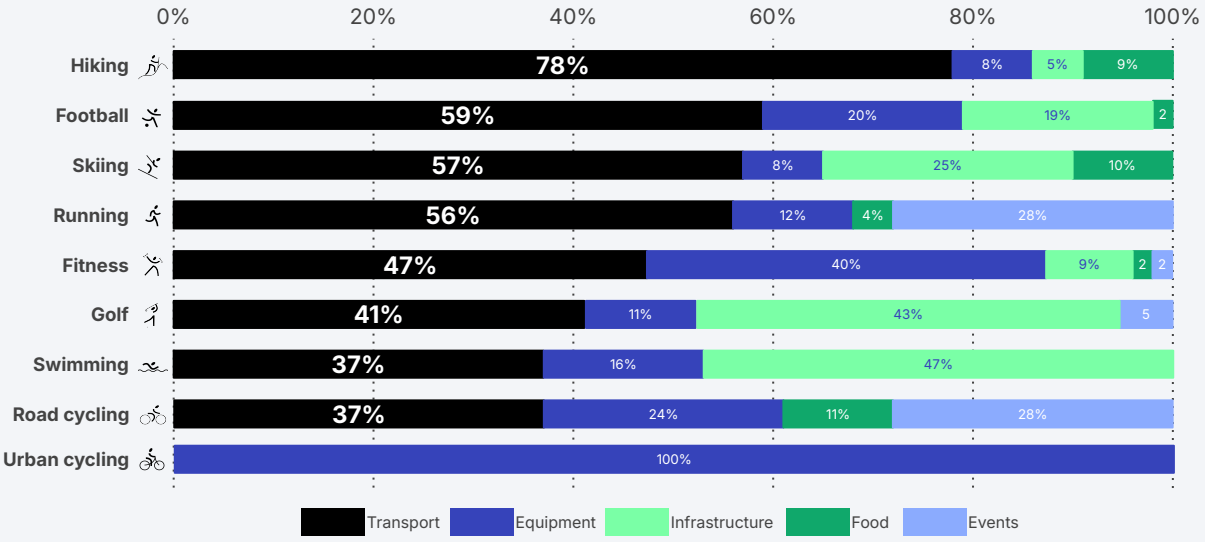


Source: use of the ADEME transport calculator to assess the transportation impacts depending on each transport mode, May 2025
For the 2 examples on transportation, the CO_2 impact are calculated based on the ADEME calculator. For the sport equipments, the figures are based on DECATHLON figures.

Learning #2

Transportation, with cars being a major contributor and often viewed as essential 'sports equipment', represents 37% to 78% of the overall carbon footprint of sports activities

Average percentage share of the carbon footprint per impact category, considering the different user profiles for each sport[1]



Source: DECATHLON, 2025

[1] Each impact category's data is calculated as a weighted average, based on the distribution of each profile. Example for road cycling: Recreational cyclists represent 29% of athletes and transportation account for 44%; Active cyclists represent 56% of athletes and transportation account for 28%; Performant cyclists represent 15% of athletes and transportation account for 55%. The weighted average for transportation of Road Cycling equals to 37%.

Before even starting their activity, sportspersons contribute to climate impact by using cars, bus, trains, or planes to **reach their sports destination** - making **transportation** the biggest contributor to the carbon footprint of sports.

52% of the total impact of sports practice, on average, is due to **transportation** (excluding urban cycling)

Why do sports practices rely on transportations?
Transportation serves as the vital link enabling athletes and enthusiasts to pursue their sporting passions, whether for competition, training, or leisure. The expansion of sports tourism also plays a part in this. Key drivers are:

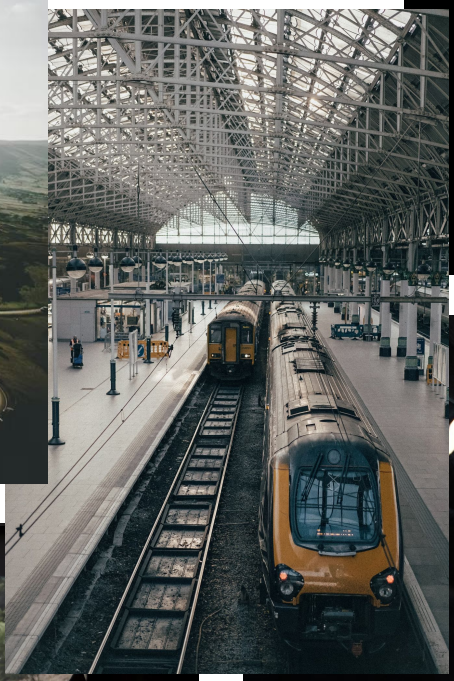
- Regular weekly access to sports facilities (e.g., football, fitness, golf)
- Traveling for competitions or specialized training (e.g., running, road cycling)
- Reaching outdoor destinations for leisure (e.g., skiing, hiking, golf, running).

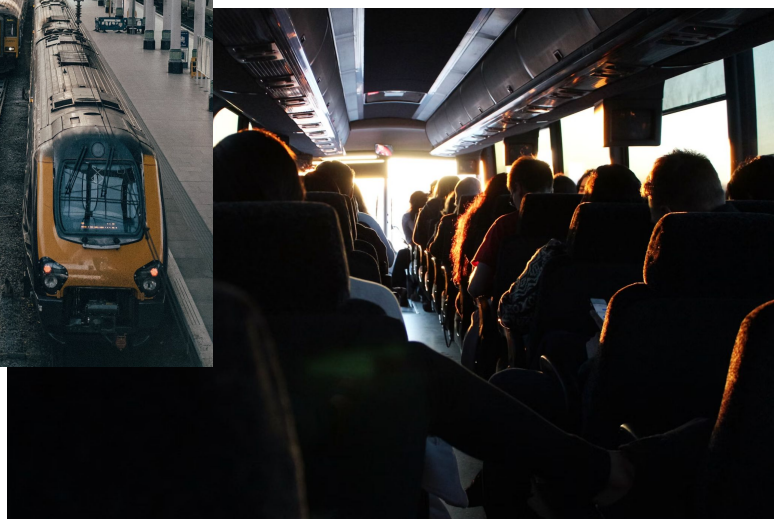
This reliance on transportation for sports participation mirrors **broader societal trends** where **mobility** for work, leisure and other activities also constitutes a significant portion of overall carbon emissions (transportation is ~27%* of the average French citizen's CO_2 impact).

* **Source**: Carbone 4, 2022 (based on 2019 figures)











How many kilometers do sport lovers travel per year to practice sports?

Running - for competition	**~710 km / year**	Car 74% · Train 6 · Active mobility & public transportation 19% · Plane 1%
Football training & competition	**~2,750 km / year**	Training: 80% Car · 20% Minibus Event: 80% Car · 20% Minibus
Skiing - local sports person	**~1,810 km / year**	86% · 14%

Source: DECATHLON survey for running and skiing (2024), FFF report for football data.

What is the CO2e impact for a 1,000 km journey?

Walk	0 kg CO_2e
High Speed Train	3 kg CO_2e
Thermal bus	29 kg CO_2e
Thermal car sharing (x4)	55 kg CO_2e
Thermal car (x1)	220 kg CO_2e
Short-haul flight	259 kg CO_2e

Source: ADEME Base Empreinte®

11,700 km

distance traveled by a French vehicle each year

Source:
French Ministry of the Energy Transition, 2023

Learning #3

Sports equipment contributes to climate impact, with an average of 17% of the total sport practice impacts

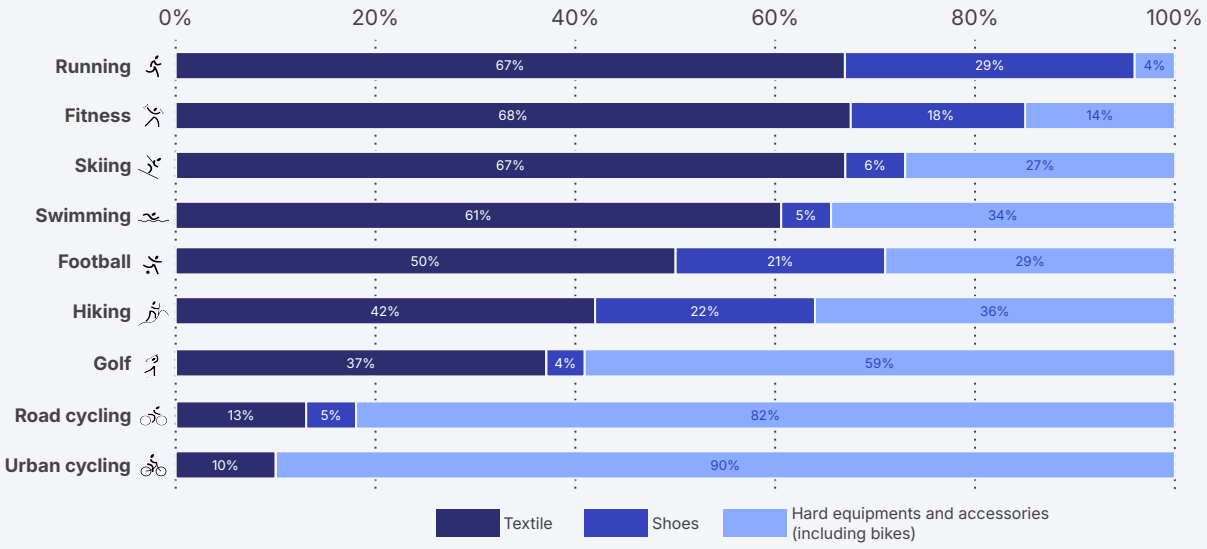
Share of the sport equipment on the total sport practice impact

17%

Textiles account for more than **50%** of the average equipment impact across 6 sports
running, skiing, fitness, swimming, golf, football

Hard equipment and accessories account for more than **30%** of the average equipment impact across 5 sports
swimming, golf, hiking, road cycling, urban cycling

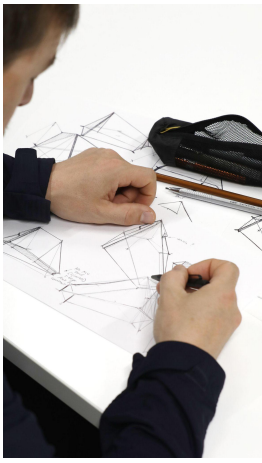
Sharing - in % - of the 3 equipment subcategories climate impact



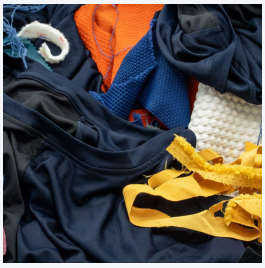
Source: DECATHLON, 2025

Designing the products to reduce their environmental impact:

At DECATHLON, our goal is to minimize the environmental impact of our products throughout their lifecycle by developing effective solutions. By integrating environmental considerations into our product development, our ecodesign approach drives us to constantly innovate and improve. Some examples of levers to reduce the product impacts are stain free dyeing, recycled metal, dry dyed (water free dyeing), greige (no dye), recycled plastic. On top of this, deploying solutions focused on the longevity and reparability of products helps to reduce waste and extend the product lifespan.



Based on DECATHLON's ecodesign approach, here are some key actions and their CO_2 reduction benefits. More information are available on DECATHLON Sustainability website.



Recycled polyester: using recycled polyester filaments (often from plastic bottles) reduces CO_2 emissions by at least **17%** linked to the production of the yarn compared to using virgin polyester.



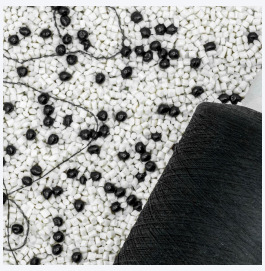
Recycled polyamide: utilizing recycled polyamide leads to a CO_2 emissions reduction linked to the material of at least **38%** compared to conventional polyamide.



Recycled cotton: incorporating recycled cotton fibers can lower CO_2 emissions linked to the production of the thread by at least **14%** compared to virgin cotton.



Organic cotton: employing organically grown cotton fibers (cultivated without chemical pesticides, fertilizers, or GMOs) decreases CO_2 emissions linked to the production of the thread by at least **23%** compared to conventionally grown cotton.



Solution-dyeing (stain free dyeing): this process, which integrates color pigments directly into the thread during manufacturing rather than dyeing the finished fabric, reduces CO_2 emissions linked to the production of the dyed textile by at least **17%**.



Dry dyeing: using dry-dyed processes can reduce CO_2 emissions linked to the production of the dyed textile by at least **39%** compared to conventional dyeing methods.



Undyed textiles: Due to the absence of additional treatments or dyeing, it enables to reduce CO_2 emissions linked to the production of undyed textiles by at least **53%** compared to conventional dyeing.



Recycled metal: this approach reduces the need for extracting new raw materials, uses 40% to 95% less energy, and cuts CO_2 emissions by at least 10% compared to virgin metals.

DOMYOS recycled cast iron weights

Product made from **72% recycled cast iron**

11% reduction CO_2e impact compared to weights without recycled material





KIPRUN KipX shoes

The first adhesive-free shoe that revolutionises the manufacturing of running shoes to enhance performance with its softer cushioning and increased responsiveness.

26% reduction in the CO_2e impact of the **manufacturing process**, compared to traditional assembly methods

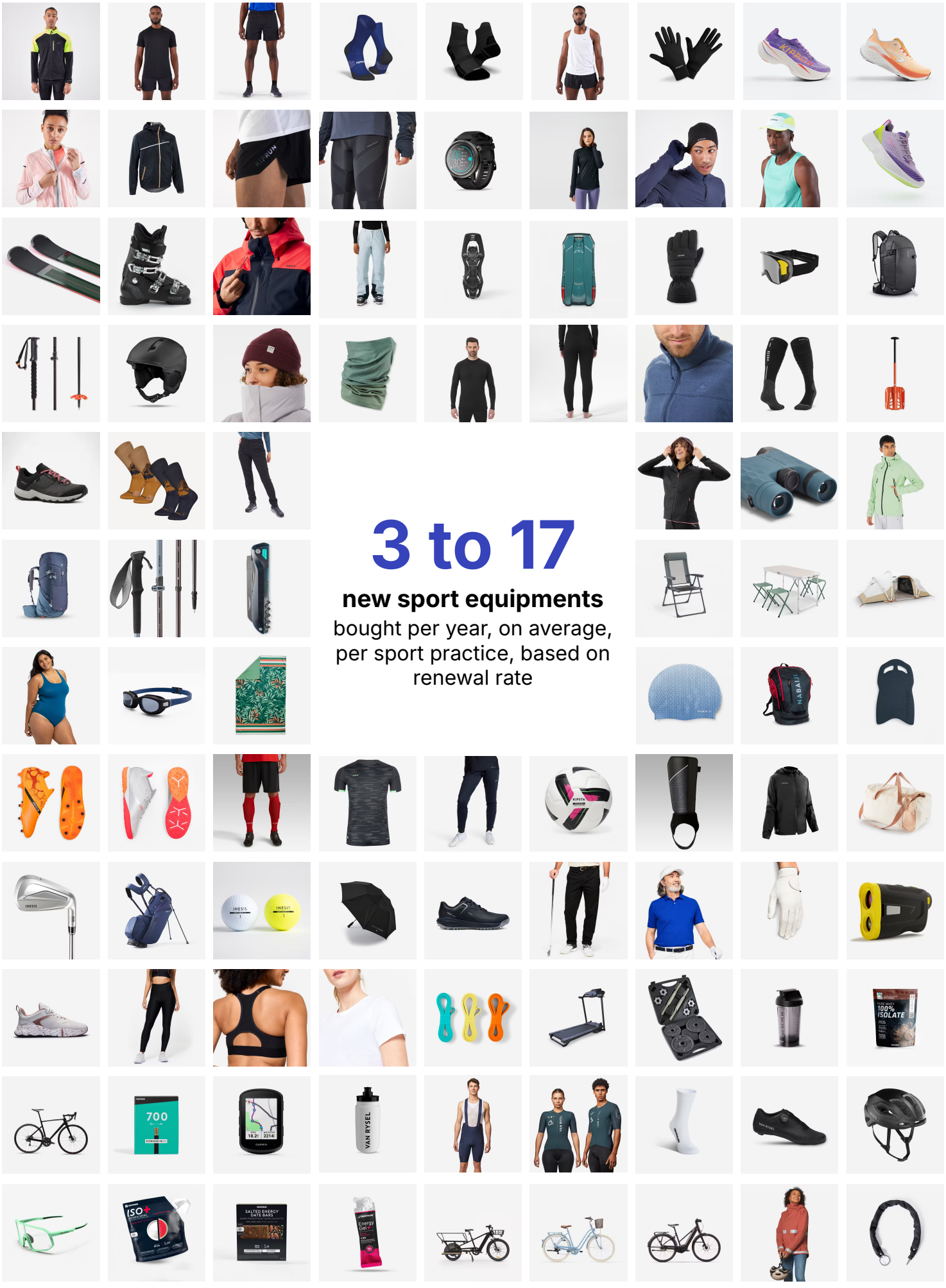
13% reduction of the total product CO_2e compared to the previous or similar product



WEDZE trail sledge

Product made from **50% recycled plastics** (HDPE)

16% reduction of the total product CO_2e compared to the previous or similar product



3 to 17

new sport equipments

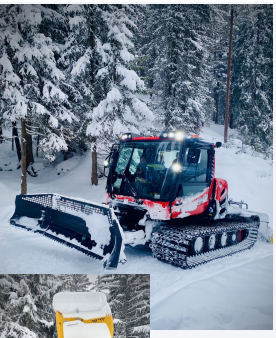
bought per year, on average, per sport practice, based on renewal rate

Source: DECATHLON, 2025
Averaged key figures - new equipment per year: skiing (<5), hiking (<5), urban cycling (<5), swimming(<5), road cycling (7), golf (12), Running (14), football (22)

Learning #4

Sports infrastructure and facilities contribute to CO_2 emissions due to energy-intensive operations, construction materials or maintenance, and require water consumption

The climate impact of 5 sport infrastructures and its main root causes





Ski area

2,435 tCO_2e / year

based on Tignes ski resort figures

Gas consumption by **snow groomers constitutes** the major contributing factor

420 L of water / skier day for snowmaking

based on 2022-2023 water extraction for snowmaking in Savoie

Fitness center

29 tCO_2e / year

Electricity for lighting

Gas for air and water heating





Football pitch

7 tCO_2e / year

considering playground, facilities and energy for an average stadium in France

Production and maintenance of **natural grass** significantly drive the impact (62%)

14,300 m^3 water / year for a professional stadium, equivalent to the volume of **~5 olympic pools**

Swimming pool

300

tCO_2e / year

for a 25-meter swimming pool, complemented by a smaller pool heated to 30°C



Electricity for water treatment and lighting

Gas for air and water heating

120 L of water per session per swimmer

Golf course

465

tCO_2e / year

based on Merignies golf course



45% due to **lawn mowers** and **maintenance equipment**

25,000 m^3 / year is the national golf water consumption average in France but 70% of golf course consumed less, equivalent to the volume of **10 olympic pools per golf course**

Learning #5

Sport activities would not just impact the climate - they could also leave a mark on biodiversity

Biodiversity refers to all living organisms - flora and fauna - and the ecosystems in which they live. This term also includes the interactions of species with each other and with their environment. This rich variety of life is fundamental to the Earth's biosphere, the global web of life, upon which we depend for so many things – food, water, medicine, a stable climate, economic growth, among others.

With the inherent appeal of outdoor practices like hiking, trail running, skiing, and mountain biking rooted in both **health benefits and connection with nature**, the ability to fully enjoy these activities is contingent upon the **good health of biodiversity**.

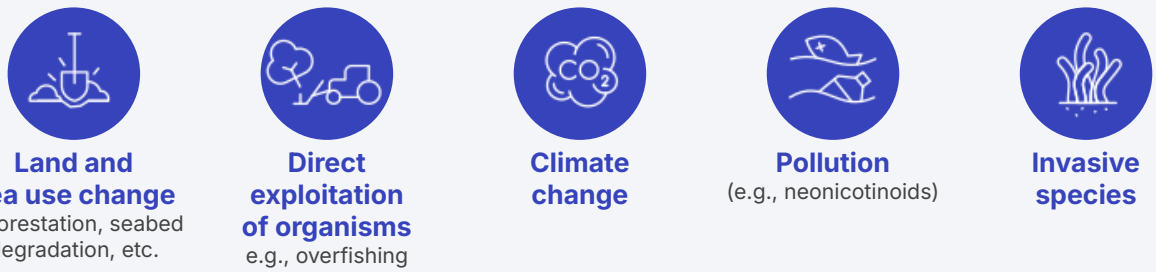
However, sports activities can have direct impacts on biodiversity across several dimensions: wildlife, vegetation, soil, landscapes, ecosystems, land usage for infrastructure, use of natural resources (e.g water), direct or indirect destruction and mortality, pollution (waste, noise, light, chemical (e.g. ski wax), spread of invasive alien species...

The spatial and temporal distribution of sports activities and the behavior of practitioners are the primary determinants of biodiversity impact, especially where activities encroach on sensitive habitats or occur during critical ecological periods—such as breeding or migration seasons for fauna, and key growth or reproduction phases for flora. Subsequently, increased numbers of events or visitors, with their associated crowd size, frequency, and intensity, mainly serve to amplify these impacts, rather than being the principal cause.

Certain species, particularly those that are already threatened or vulnerable, are more susceptible to disturbances, making it crucial to assess biodiversity impacts within a **local context**.

To understand the **origin of the biodiversity decline**, the **IPBES** - Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services - has identified **five major human-induced pressures that contribute to it**.

The 5 threats to biodiversity

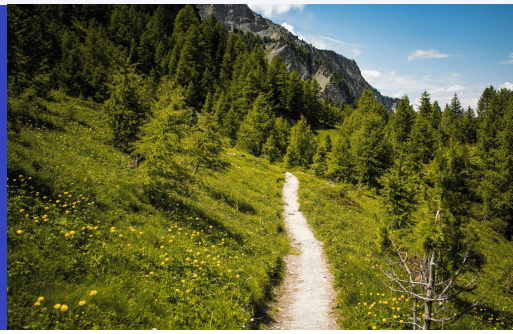


Source: DECATHLON diagram, from the IPBES

2 to 6% decline of biodiversity each decade since 1970-1990

73% decline in global populations of mammals, fish, birds, reptiles, and amphibians since 1970

#2 Biodiversity loss and ecosystem collapse ranks #2 on the global planet risks over the 10-year horizon, with a significant deterioration compared to its two-year ranking

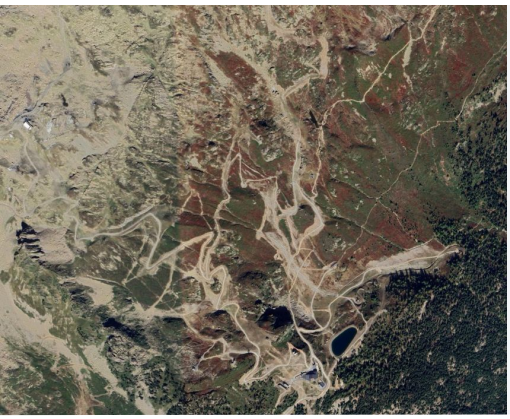


Sources: IPBES (Nexus report, 2024), WWF's 2024 Living Planet Report, The World Economic Forum's 2025 Global Risks Report

Insights and learnings

Sports activity potential pressures on biodiversity

Outdoor sports might generate dynamic impacts on the 5 major biodiversity pressures defined by IPBES. Other sports requiring infrastructures might create cumulative and static impacts on biodiversity. Depending on how one practices sport, the level of impacts could still vary. The following sections describes these potential impacts.



Land and sea use change

Some sports require infrastructure development, which leads to habitat destruction and fragmentation. Examples include:

- **Deforestation and habitat fragmentation or destruction for sport and road infrastructures** (e.g. ski resorts, trail networks, beach sport infrastructure)
- **Erosion, soil degradation, and disruption of ecosystems** used by hiking or mountain biking

Direct exploitation of organisms and disturbance

Some outdoor sports can impact wildlife and ecosystems, sometimes leading to biodiversity loss:

- **Fishing activities** that put pressure on aquatic species and ecosystems
- **Certain hunting practices** that may disrupt population balances
- **Foraging and plant collection** that affect fragile habitats and species
- Human installations and activities can generate **fauna disturbances** due to various forms of light, noise, olfactory pollution... The impact on biodiversity can be significant (increased risk of mortality for individuals)
- **Disturbance of sensitive species**, such as birdwatching near nesting sites or hikers unintentionally harming rare plants





Invasive species

Outdoor sports can contribute to the spread of invasive species, often unintentionally:

- **Transport of invasive seeds** and pathogens via footwear, boats and water sport equipment moving between different locations can inadvertently spread invasive species
- Alteration of aquatic ecosystems through the introduction of **invasive fish species** by anglers
- Unregulated introduction of **non-native species** for game hunting or landscaping in golf courses

Pictures:
Trek paths close to Chamonix viewed from satellites (picture source: Google Earth)
Footprints of a human in the snow, crossing a protected area of the black grouse in the Alps
Buddleia davidii, known as Butterfly Bush, is an invasive species that spreads rapidly and outcompetes native plants in many ecosystems



Climate change

While not the primary driver of biodiversity loss, climate change is exacerbated by some outdoor sports:

- High carbon footprints from travel
- Deforestation and ecosystem modification **affecting carbon sinks**
- Increased demand for artificial snow in ski resorts, **consuming water and energy**

Pollution

Outdoor sports can contribute to different types of pollution:

- **Microplastic pollution** risk of leak from synthetic clothing and sport gears
- **Chemical contamination** from sunscreen affecting coral reefs and water bodies, or insect repellents affecting decline of crustaceans in mountain lakes,
- **Waste accumulation** from abandoned gear, plastic bottles, and food packaging
- **Noise and light pollution** disrupting nocturnal wildlife and migratory patterns





Insights and learnings

Sport "way to practice" factors that might impact biodiversity

Several categories of factors might impact biodiversity when practicing outdoor sports. These include the period of practice, the location (protected areas, on/off-trail zones, wetlands), the level of human presence, the temporal spread of activities, weather conditions, and the presence of pets. **The combination of all these factors significantly increases the risk of disturbing biodiversity**. Their cumulative effects can amplify the impact on wildlife and ecosystems.

Potentiel types of biodiversity impact resulting from different outdoor sports practices

	Low impact	Medium impact	High impact	Very high impact
Practice location	• Practice on **car-accessible road, gravel road**	• Practicing on **path** • **Transition zones** (forest edges in mountains, coastal areas)	• Practicing **off-trail** • Practicing in a **protected area or national park**	• Practicing in a **protected area, with periods of restricted sports practice** - winter or nesting period • Practicing **off-trail with wetland area**
Practice period		• Practicing from **mid-Dec. to mid-July**: greater impact than the rest of the year (for all activities)	• **Twilight** – practicing during sunrise or sunset	• **Night** practice
Practice dispersion			• **Temporal dispersion of activities in an area** (within a day, over months) • **Activity spatial dispersion**	
Attendance			• Increased impact risk as **attendance increases** in an area	• Moving **from 0 to a small number of users** in an area causes a **larger impact** than an increase in attendance when some practitioners are already present
Weather conditions			• **Cold** winter temperatures • **Fresh snowfall** depth • Practicing after several days of **precipitation**	
Other factors		• For hiking, bivouac camping can increase **disturbance risk** (human presence at night, trampling risk, waste/hygiene management) • Practicing sports with **pets**		

Source: DECATHLON, based on interviews from 10 experts on sport & biodiversity (French Ministry of Sport, ASTERS, French National Parks)



Examples of how different sports activities can affect specific ecosystems or species

- **Trail running and hiking**, while promoting a connection with nature, can contribute to **soil erosion, the trampling of vegetation, and the spread of invasive alien species**. These activities can also disturb sensitive nesting birds in alpine environments and interfere with the **reproduction and breeding of mammals**, particularly when participants deviate from established paths or practice during night or twilight periods.

- **Climbing activities** can pose a risk to biodiversity. They can negatively impact the abundance and diversity of cliff-dwelling plants and, especially when routes are located near sensitive nesting sites of birds of prey, can lead to disturbance or nest abandonment. For example, in the Alps, certain cliffs known for raptor nesting have sometimes seen conflicts between climbing activities and wildlife protection efforts, requiring specific regulations or temporary closures during breeding seasons.

- **Mountain biking** in forests can have several impacts, with **increased soil erosion** on steep slopes and soft ground often being the most significant. It can also cause soil compaction and root damage, potentially affecting forest regeneration and plant diversity, and may displace wildlife.
- **Winter sports** like skiing and snowshoeing can **disturb wildlife**, notably in restricted areas such as forest areas and edges that serve as crucial winter refuges. For example, passing through these zones stresses sensitive Black Grouse during winter. This disturbance can cause displacement and significant energy loss, thereby impacting their chances of winter survival and subsequently their reproductive success, especially when activities occur off-piste or when access rules designed to protect these populations are ignored.

- Even seemingly low-impact activities like **swimming and the use of shorelines** can have consequences. These activities can disturb wildlife such as amphibians, birds, and fish, and contribute to shoreline erosion. Additionally, the use of sunscreen containing substances like oxybenzone in open water bodies, including mountain lakes, can harm aquatic organisms.

Beyond minimizing negative impacts, **sports can also play a positive role in conservation**. They can foster active citizenship and environmental stewardship among participants. For example, organized sporting events can incorporate elements of environmental education and promote fundraising for local conservation initiatives.

Furthermore, **citizen science projects**, such as biodiversity monitoring during hiking or running events, can engage participants in data collection, contributing valuable information to conservation efforts and deepening their connection to nature.

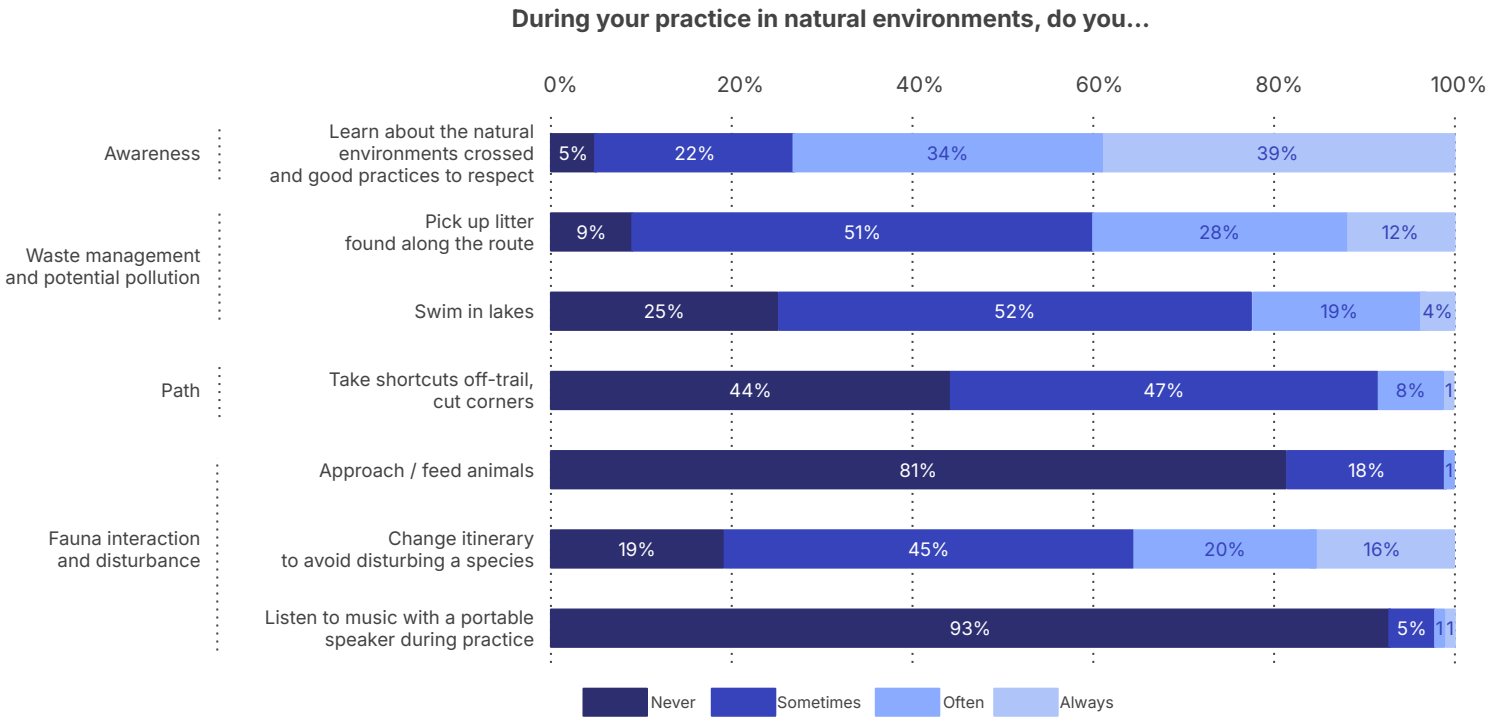






Feedback from hikers: key findings on sports practitioners and biodiversity

The data presented in this section originates from a questionnaire distributed to hikers, with a total of 756 responses received. Participants were asked about their behaviors 'during your practice in natural environments, do you...' with four possible responses: never, sometimes, often, always.

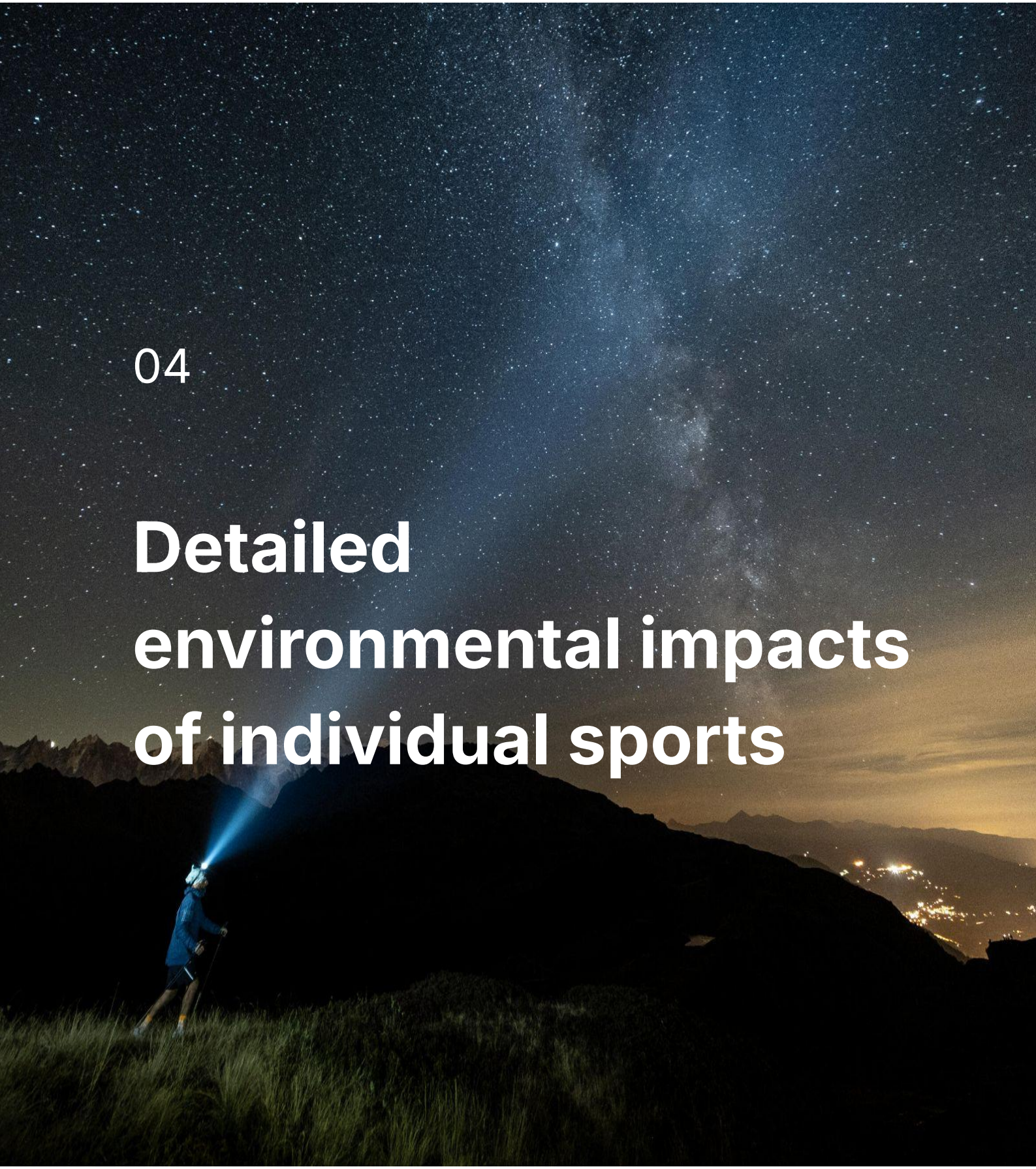


Source: survey conducted by DECATHLON, 2025

The data suggests a generally positive level of environmental awareness among outdoor sports practitioners, with **73% actively learning about good practices**. This is supported by **40% regularly collecting litter** and **36% modifying their routes to protect wildlife**. Furthermore, the very **low incidence of loudspeaker use** (93% never) and the **avoidance of direct animal interaction by 81%** are encouraging.

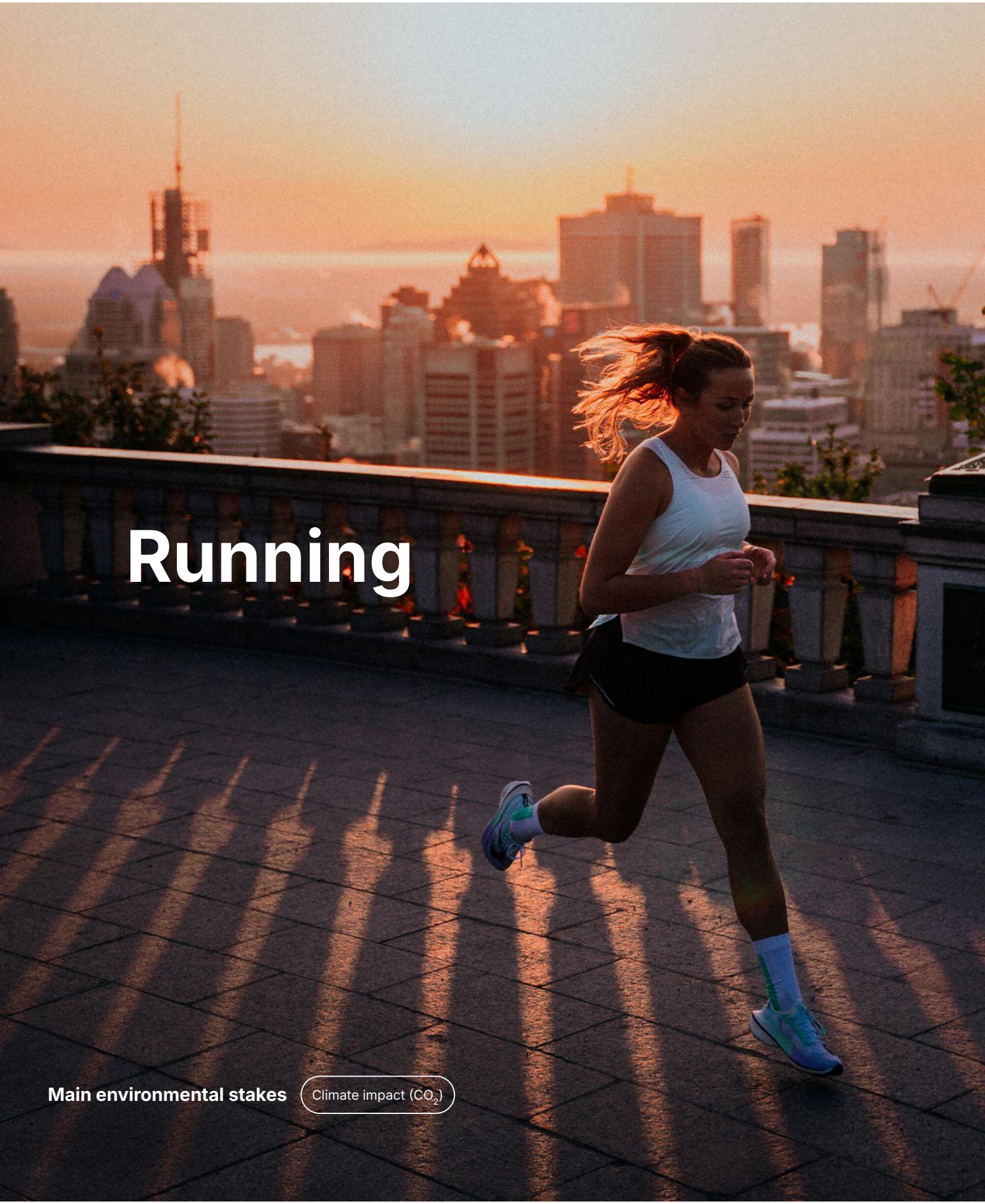
However, the fact that **44% sometimes go off-trail** and **75% engage in swimming in lakes** indicates areas where the potential for negative environmental impact exists and could be addressed.





04

Detailed environmental impacts of individual sports



Running

Main environmental stakes Climate impact (CO_2)

Key finding for running

This assessment of the environmental impact of running is based on three data sources: (1) a DECATHLON survey answered by 491 runners (79% active, 21% performant), (2) the Union Sport Cycle 'Observation du running 2024', and (3) external data from running event organizations (via the Sport 1.5 database).

2 running profiles are assessed[1]

Active runner

43% of runners in France[2]

Running for the pleasure of the effort and to set myself small personal challenges

74 run activities / year

800 km
80 hours / year
3 races / year

Performant runner

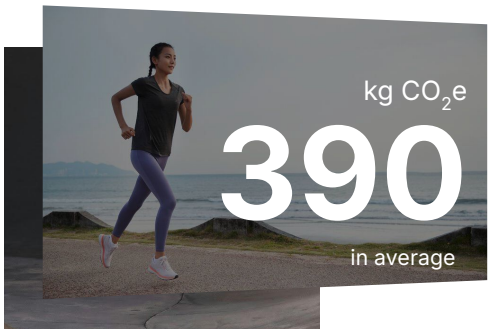
26% of runners in France[2]

Run to progress, achieve my goals and mainly to perform

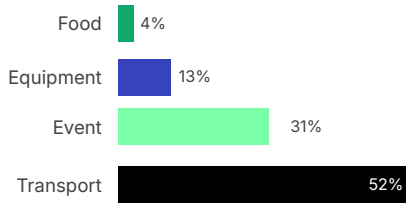
145 run activities / year

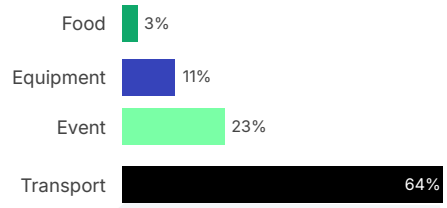
1500 km
140 hours / year
5 races / year

Climate impact of one year of running practice

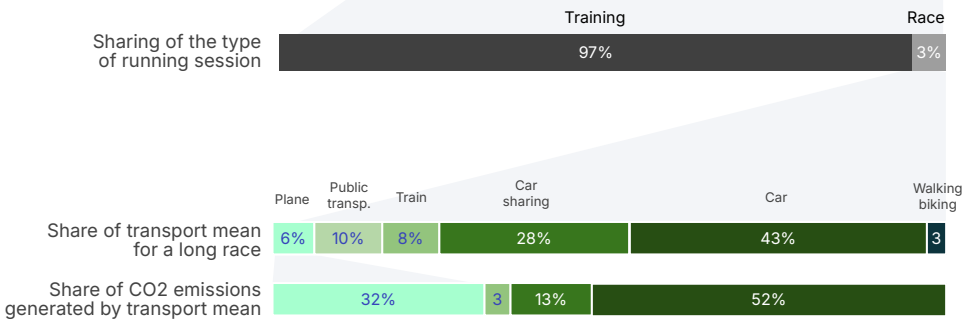








Focus on the performant runner



6%

of the performant runners take a plane for a long race competition, equal to

32%

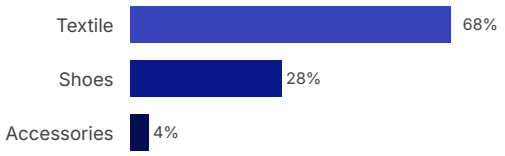
of the transport CO2 emissions

[1] **Source**: Union Sport Cycle - Observatoire du running 2024: Nearly 12.5 million French people run, representing 25% of the population. Around 8 million run weekly, making it a popular regular activity.
[2] **Source**: DECATHLON's survey conducted in July 2024

Running sport equipment climate impacts account for 12% of the total on average

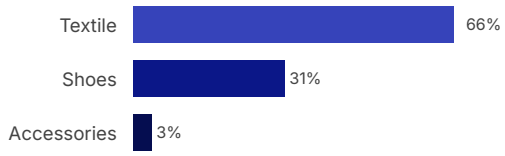
Active runner

50 kg CO_2e / year



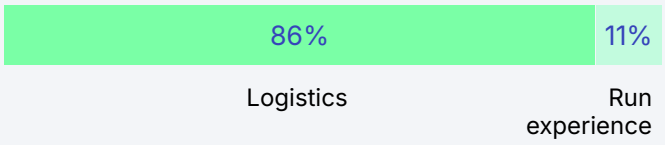
Performant runner

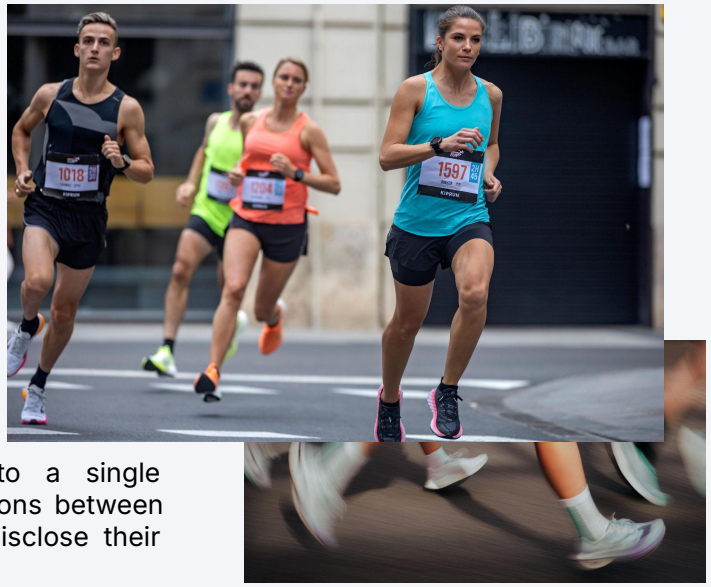
79 kg CO_2e / year



Running events leave a carbon footprint, from logistics to race day experience

30 kg CO_2e per race per runner





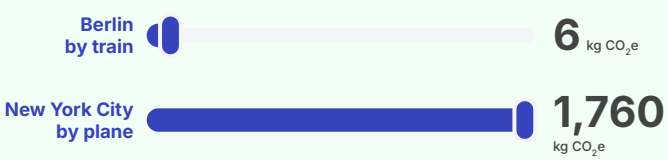
⚠The carbon footprint presented here is specific to a single international marathon. Recognizing the significant variations between events, we strongly advocate for all races to publicly disclose their carbon footprint, ensuring transparency for participants.

First Steps?

Reducing sport's carbon footprint

Search for more local races and low carbon transport mode

x285 Paris - Berlin by train, a 285x lighter footprint than NYC by plane



Road cycling



Main environmental stakes Climate impact (CO_2)

Detailed environmental impacts

Key finding for road cycling

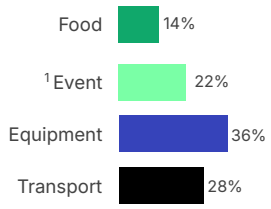
This assessment of the environmental impact of road cycling is based on a DECATHLON survey answered by 361 riders (for travelled distances and mode of transport), interview with the French Cycling Federation (FCF) for event impacts and internal expertise for equipment and food hypothesis.

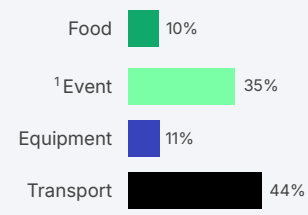
3 road cycling experiences are assessed in terms of climate impact, from beginner to expert practitioners

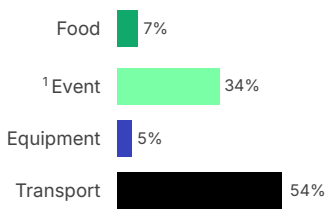












[1] Events: accommodation and meals during holidays and training stays, logistics during races including vehicles accompanying the racers

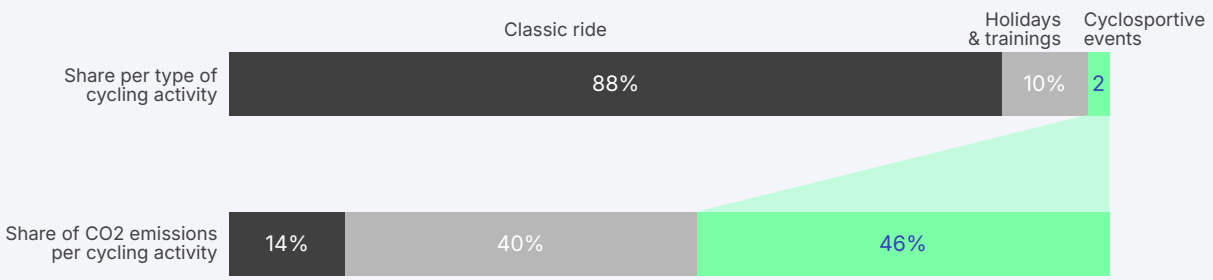
2

cyclosportive events responsible for

46%

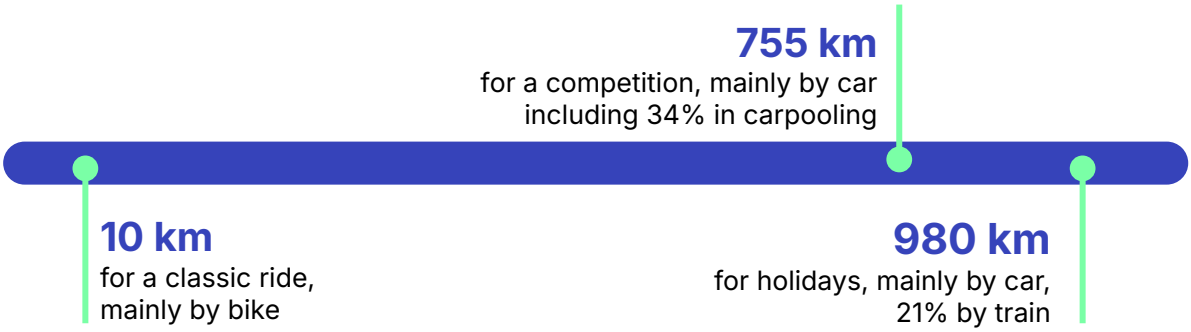
of the total ride CO_2 emissions, mainly due to the use of transportation

CO_2 impacts per type of activity for the active cyclist



Transportation: not just by bike...

While cycling is a sport in itself, riders rely on other means of transport to reach races, training camps, and cycling holidays. An assessment of the distance and transportation modes used for road cycling sport person, based on a survey conducted by DECATHLON, highlight the following key figures:

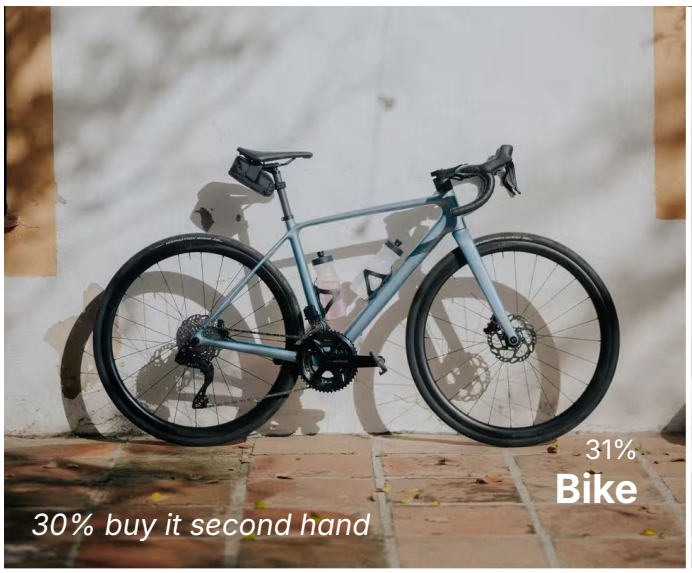


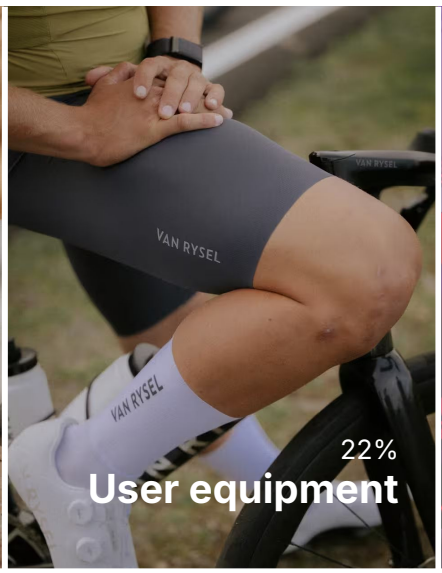
While transportation behaviors are relatively uniform across most road cycling profiles, a notable exception is the 12% emissions contribution from racers who used airplanes for training-related travel.

The CO_2 impact of cyclist's equipment

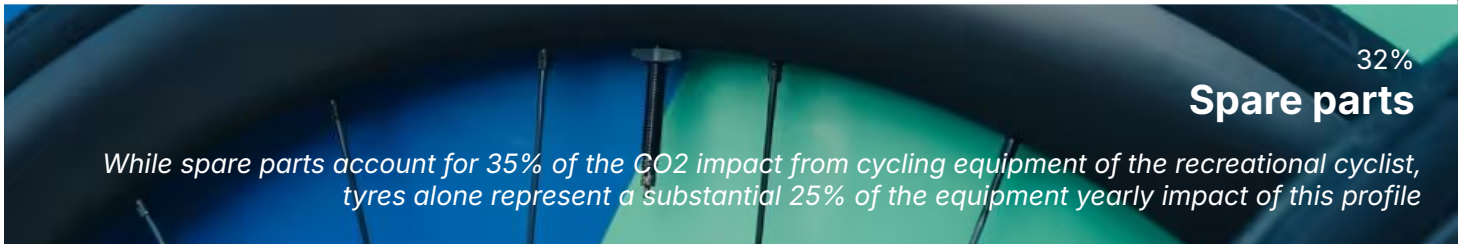


One year of practice emits between 40 and 60 kg CO_2e. 30% of second hand bikes are considered in the calculation.









Urban cycling

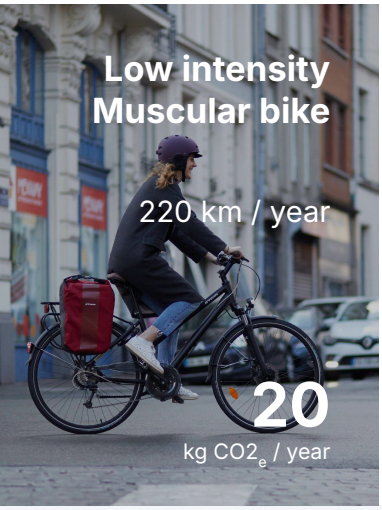


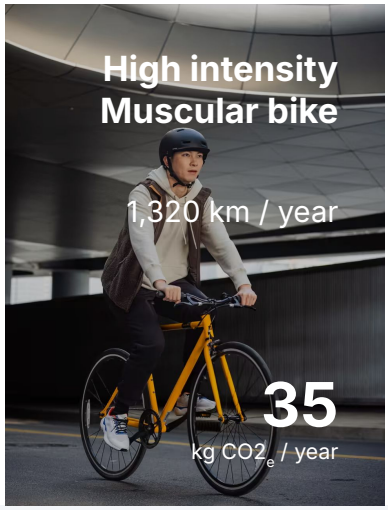
Main environmental stakes Climate impact (CO_2)

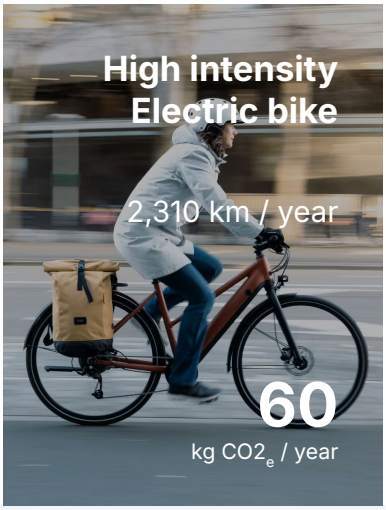
Key finding for urban cycling

This assessment of the environmental impact of urban cycling draws on previous DECATHLON study concerning Climate Dividends, as well as DECATHLON's internal sport expertise for descriptions of user experiences and hypotheses.

The yearly carbon footprint of urban bike mobility





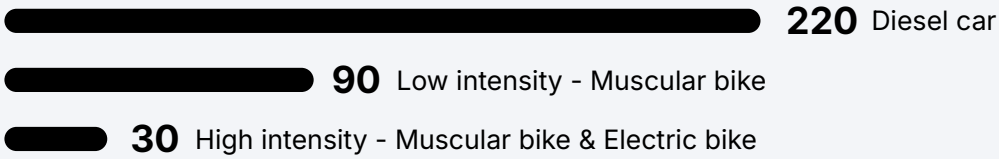




Carbon footprint per km: comparing transportation modes

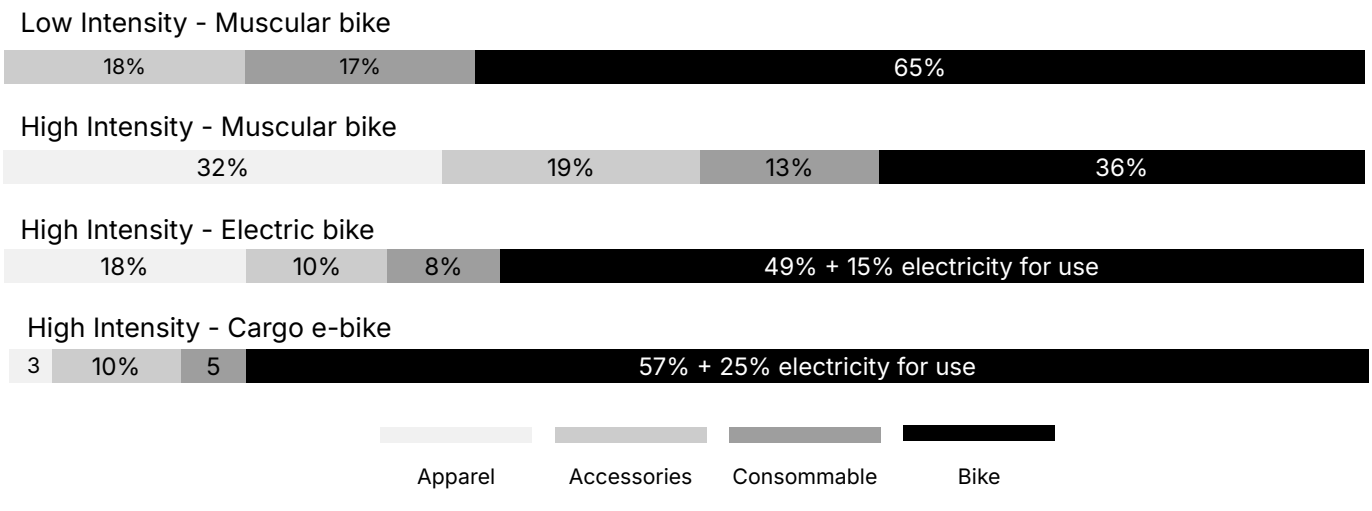
The more you use your bike, the more you cushion its impact

Emissions for **1 km** (in gram CO_2e per km)



Source: car (Empreinte database), bike (DECATHLON; based on emissions over the lifespan (equipments and spare parts) divided by the distance travelled over lifespan

Urban cycling equipment: yearly CO2 impact sharing



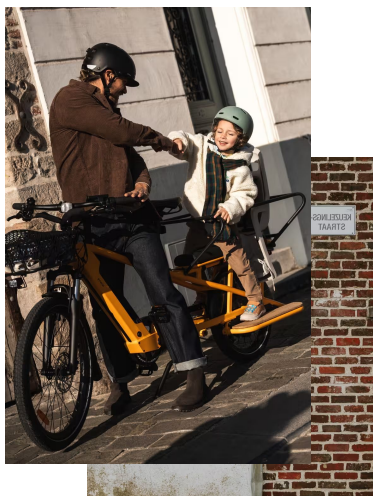
More money, less carbon emissions and a healthier you… The triple benefits of switching to bike

This section underscores the significant benefits of integrating cycling into daily travel, replacing some car trips.

15
months for CO2 amortization

is the time it takes for most cyclists replacing car trips to **amortize the CO2 emissions** of their bike and equipment manufacturing (4 years for low-intensity muscular bikes).[1]

Choosing a bicycle for urban travel reveals its striking long-term value over a 10-year period, delivering an **estimated saving of between 1,600€ and 6,000€** when comprehensively comparing all expenditures – from the initial investment in the bike and its upkeep, including parts and cycling accessories, against the recurring costs of fuel and maintenance associated with car ownership.



Bike vs. car: 10-year savings in € and CO_2e

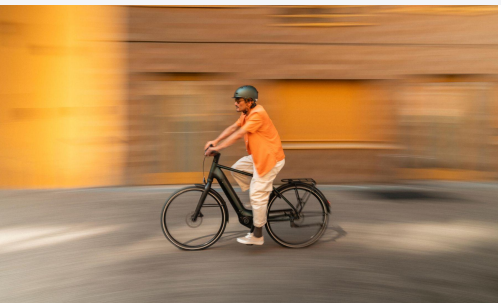
Muscular bike	1,600 € saved	2.6 tons CO_2e saved
Electric bike	2,200 € saved	4.5 tons CO_2e saved
Cargo e-bike	6,000 € saved	7.6 tons CO_2e saved

Analysis based on: car consumption of 0.056 L / km, gas price of 1.7 € / L, and inclusion of various car use expenses
Limit: Note that the focus here is on the car-to-bike transition, not shifts from public transit.

The other benefits of urban cycling: Flow, Clean, Fit

In big cities such as Paris, Milan, London, Geneva drivers lose time in traffic, more than 100 hours / year. Citizens also face air and noise pollution.





By choosing to **commute by bike three times each week**, individuals gain an extra **two hours of valuable physical activity**, contributing positively to their overall **health and well-being**.

2
hours of sport per week

[1] Carbon payback period calculated for the three regular and daily commuting profiles in the study (regular muscular bike: 1.16 years / 14 months; regular e-bike: 1.20 years / 14.5 months; cargo e-bike: 1.23 years / 15 months), assuming direct substitution of individual thermal car journeys. The calculation balances the initial carbon debt (manufacturing of the bike, secondary battery, apparel, and essential accessories) against the avoided emissions per kilometer, based on ADEME's reference emission factor for an average thermal car (0.22 kg CO2e/km, covering both vehicle manufacturing and fuel combustion, Base Empreinte). For the low-intensity / occasional profile (220 km/year), carbon payback is achieved in 4.2 years.



Football

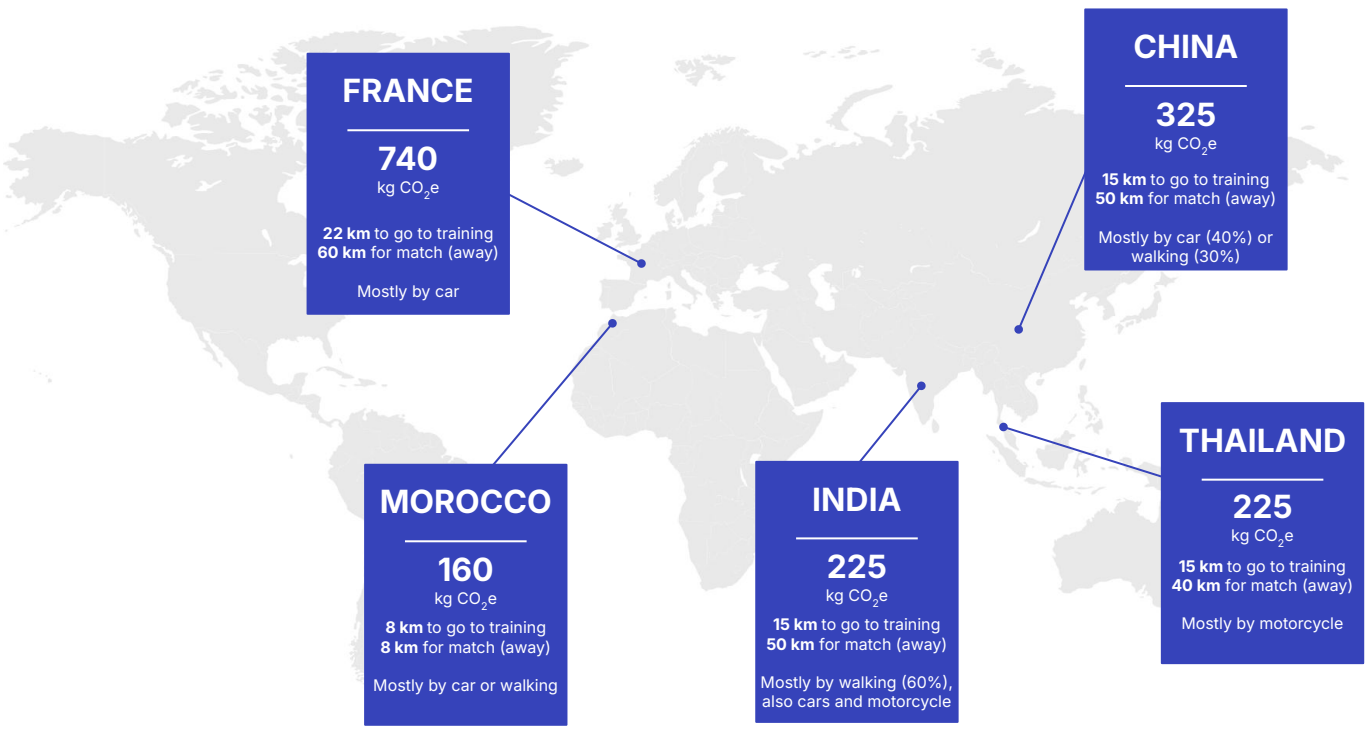
Main environmental stakes

- Climate impact (CO_2)
- Water consumption
- Biodiversity (soil sealing, land usage)

Key finding for football

For the football practice, The Shift Project released in February 2025 a complete report on professional and amateur GHG emissions and levers for mitigation. To complete this study, we developed calculation for several countries over the world, thanks to local experts to challenge and validate assumptions about practice in China, Thailand, Morocco and India.

Football practice worldwide: one year analysis, 2-4.5x disparity vs. France

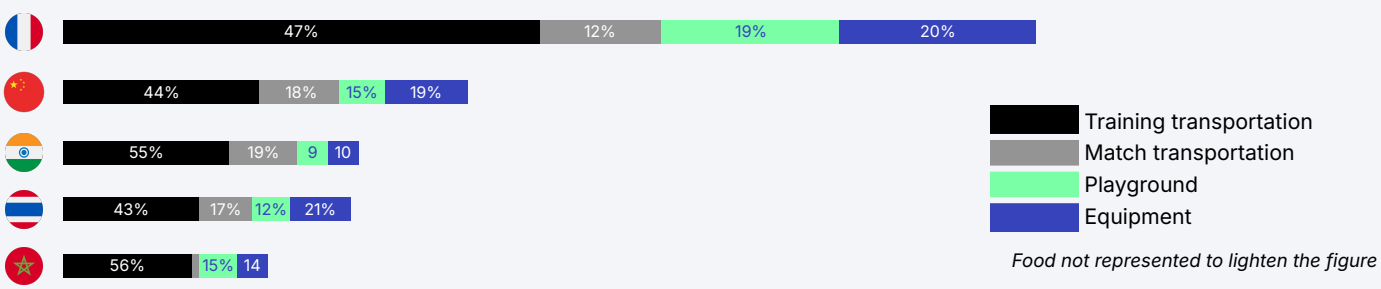


Practice in other countries (China, India, Thailand, Morocco) has an impact between **2 and 4.5 times less than in France**, due to:

- less use of cars for training and matches
- infrastructures with fewer natural grass pitches
- a range of equipment that is less frequently renewed (based on a revenue ratio), and no winter equipment for India, Thailand and Morocco.

However, sharing between emissions type is quite similar:

Sharing - in % - of the subcategories climate impact per country



Food not represented to lighten the figure

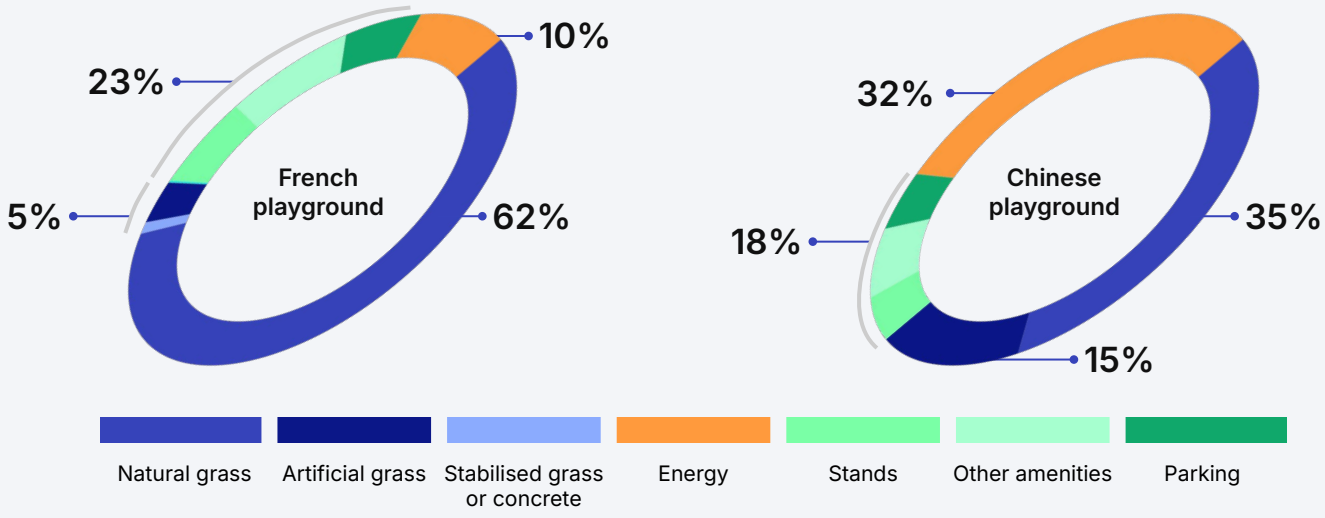
Transportation is the main contributor of football impact

Globally, transportation to training sessions and matches is the primary environmental concern. The same emission factors are used for all countries in this analysis.

Breakdown of CO_2 emissions from football infrastructure

Significant differences are observed between countries. In France, with its lower-carbon electricity mix, natural grass is the major contributor to emissions (62%). In China, natural grass and electricity contribute 35% and 32% respectively.

Playground infrastructure CO2 impact - sharing comparison between France and China



Source: Data for France comes from the French Football Union (FFF), data for China comes from DECATHLON based on local football experts

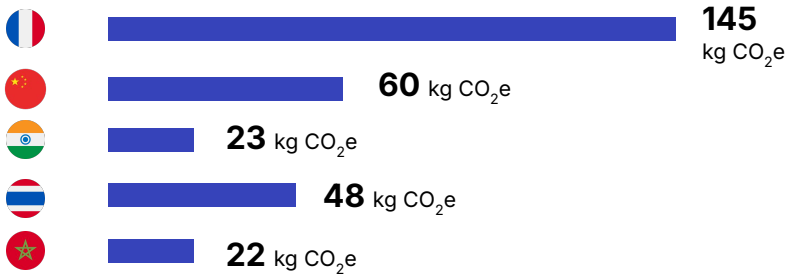
The choice between natural and artificial grass necessitates an examination of health impacts, plastic pollution, water consumption, lifespan of the pitch and soil artificialization. Currently, the literature does not offer a conclusive answer.



Breakdown of CO_2 emissions from football equipment

50% on textile, including

17% on club clothing for France



First Steps?

Reducing sport's carbon footprint

Switching from car to public transportation for training commutes twice a week could reduce the transportation impact by 65%.





Hiking

Main environmental stakes Climate impact (CO_2) | Biodiversity (fauna, flora)

Detailed environmental impacts

Key finding for hiking

This assessment of the environmental impact of hiking cycling is based on a DECATHLON survey answered by 735 hikers (for number of activities, travelled distances, mode of transport, accommodation and food), and internal expertise for equipment hypothesis.

The unitary and annual CO_2 impact of hiking



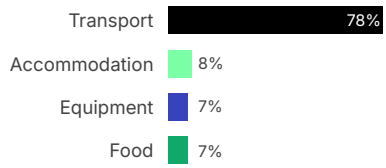




One year practice in average

5 one day hiking,
2 weekend hiking,
1 week of holidays

315 kg CO_2e



78% transportation: understanding hiking's carbon footprint

Average distance travelled (round trip)

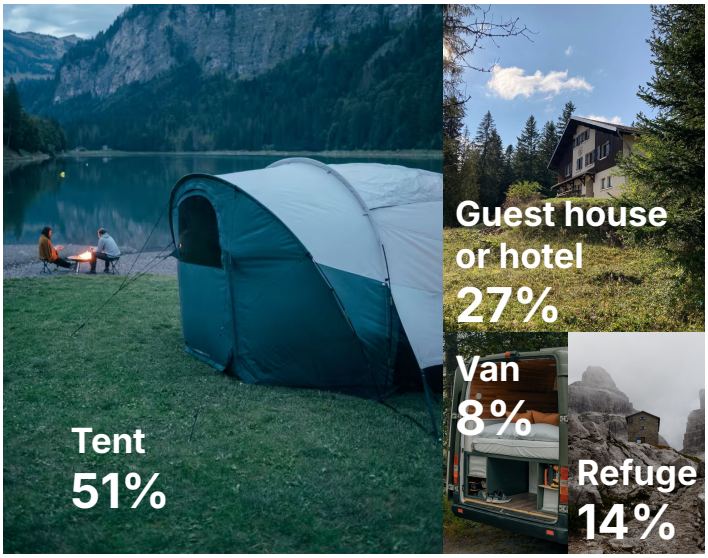


For a one-day hike, **34% of hikers travel less than 20 km round trip**, resulting in less than 2 kg CO_2e

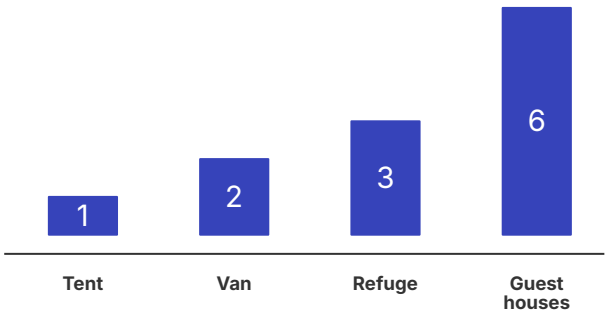
7% travel by plane, accounting for up to **26%** of the transportation impact

Choosing your sleep: the CO_2 impact of 1-night hiking accommodation and hiker preference

Hikers choice for weekend and holidays accommodation (%)



Carbon weight of a night by type of accommodation (kg CO_2e / night)



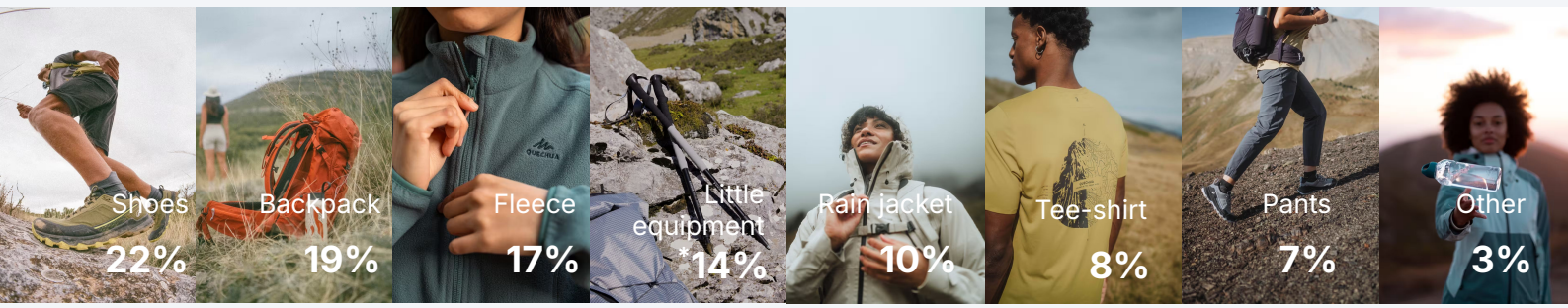
Source: Empreinte database from ADEME.
Hotels are between 4 kg CO_2e to 8 kg CO_2e depending on the standing



A full set of comfortable camping gear emits an average of **630 kg CO_2e**.
Equipments are used about 2 weeks per year.
Renting is an interesting option for this heavy equipment.

1,5
kg CO_2e per hike

Breakdown of CO_2 emissions from hiking equipment



Diverse little equipments

First Steps?
Reducing sport's carbon footprint

High-speed rail has an impact **16 times lower** per passenger-kilometer than carpooling (assuming 2.25 people per car, the French average). This means for the same carbon footprint, you can travel 16 times further.
Unlock exploration with low carbon transportation!



Skiing

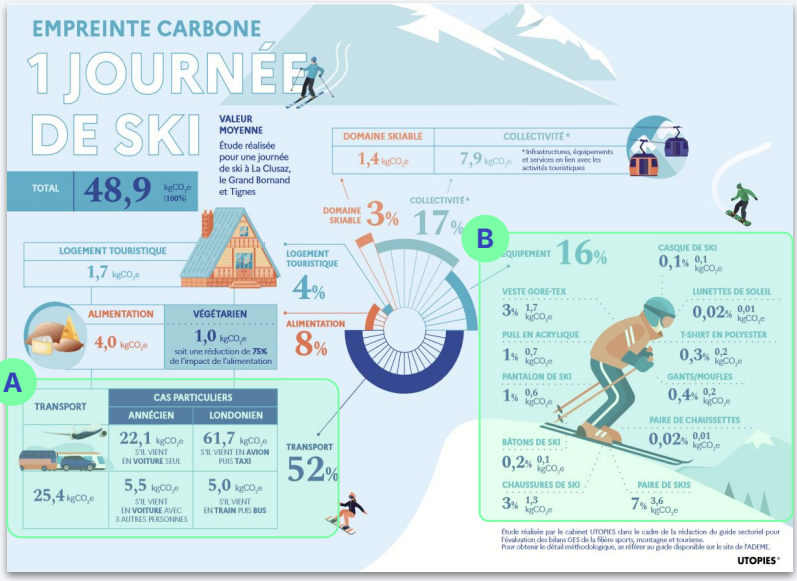
Main environmental stakes

- Climate impact (CO_2)
- Water consumption
- Biodiversity (fauna, flora, soil sealing)

Key finding for skiing

Based on the core findings of ADEME's study by Utopies regarding skiing practices*, an in-depth analysis of transportation (A) and equipment impacts (B) was undertaken. This analysis considered three skier profiles defined by their travel distance: Local, Nearby & Border Regions, and Distant Regions.

Building on ADEME's results: figures from an in-depth analysis



A

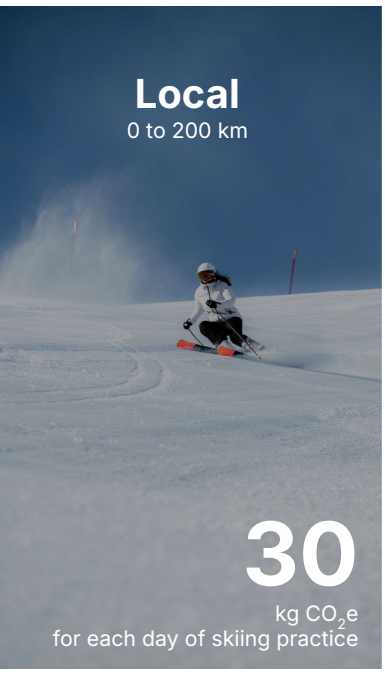
Transportation represents between **48 and 72%** of total impact, depending on the profile studied

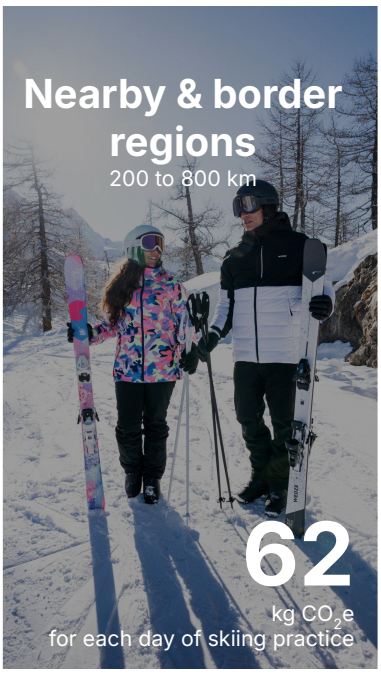
B

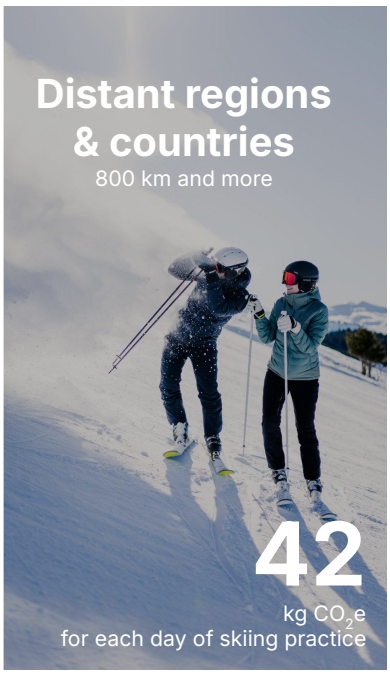
Equipment represents between **6 and 10%** of total impact, depending on rental rate and use intensity

*** Source**: UTOPIES study

Daily impacts of skiing practice, per skier profile







420 L

of water per skier day for artificial snow: the equivalent of 2 full bathtubs

Source: based on 2022-2023 water extraction for snowmaking in Savoie

Limit: only French respondents, bias on transportation for distant regions, only 1% of plane transport mode

Deep dive A on transportation

Transportation is the largest contributor to the ski practice impact. For instance, traveling by plane generates significantly more emissions than traveling by train or carpooling. Consequently, the most significant change the skier can make is regarding the transportation mode they choose to reach the ski resort.

80 to 94%
car use for all profiles

17%
come by train among distant profile

Note: The exclusive inclusion of French respondents in this questionnaire represents a significant bias. Given that approximately 30% of skiers in the region are not French, the impact of transportation on the overall findings, particularly regarding travel distances and modes, may be underestimated.

Deep dive B
Breakdown of CO_2 emissions from skiing equipment

30
kg CO_2e
for 1 skier per year

Top 3 skier impactful equipment category



21% pant
20% jacket
19% bag

Other equipments impact sharing
15% for Fleece / Under jacket, thermal underwear
13% for ski, sticks, shoes / boots
11 % for small equipment: gloves, mask, socks, hat, neck strap
2% for helmet

Ski one week a year?

Renting your gear means
80% less emissions
from skis, sticks and boots

Other environmental stakes

Beyond climate change, other environmental impacts of skiing should be considered. These include water usage, soil artificialization from resort development and habitat disruption. Furthermore, off-piste skiing can affect biodiversity by disturbing hibernating wildlife, an often overlooked consequence beneath the snow.

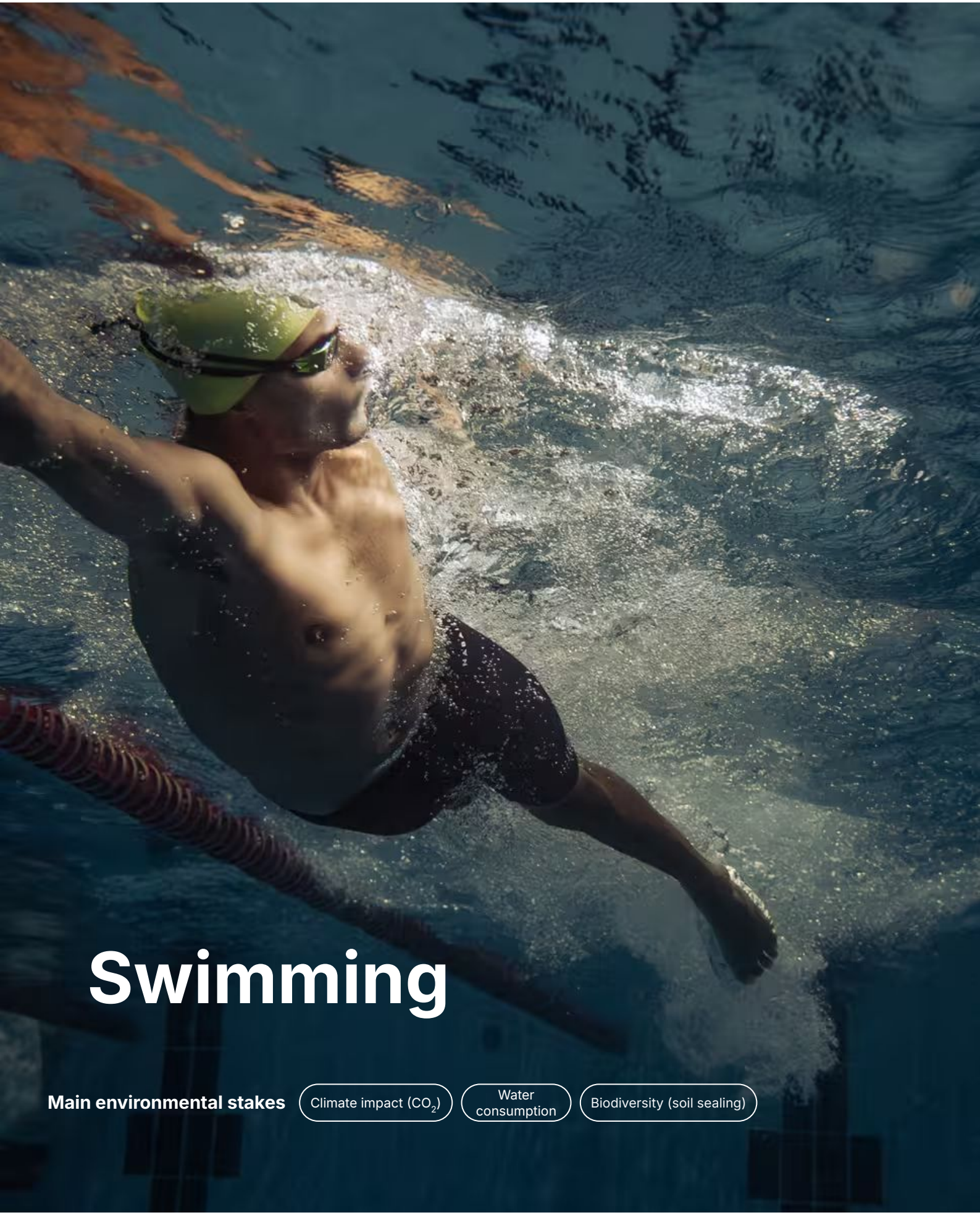
First Steps?
Reducing sport's carbon footprint



Local residents can cut their transportation carbon footprint in half simply by switching from driving alone to **using public transport**.

By **choosing train travel** over carpooling, a long-distance tourist can achieve a threefold reduction in their transportation footprint.





Swimming

Main environmental stakes

Climate impact (CO_2)

Water consumption

Biodiversity (soil sealing)

Key finding for swimming

In the absence of sufficient data on average profiles, the methodology employed defined profiles based on internal expert knowledge and previous studies. Utilizing this approach, the environmental impact of swimming practice is assessed across three distinct user experiences: recreational swimmers enjoying the benefits of water, wellness-focused swimmers, and performance swimmers. These calculations assume the French energy mix, which has a lower carbon footprint than other countries like Germany or Poland.

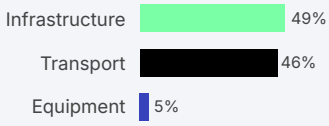
3 swimming experiences are assessed in terms of climate impact, from joyful to expert practitioners

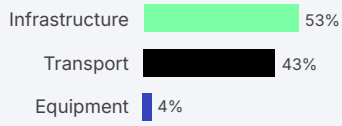












~4 kg CO_2e per session per swimmer

Breakdown of the swimming pool infrastructure impacts

The infrastructure impact is primarily due to **gas consumption (87%)**, with **electricity** contributing a smaller portion (13%). Operationally, expect a water demand of **120 liters per swimmer per day**, based on literature.

For a **wellness profile**, a year of swimming practice represents the same consumption as **one French citizen's 11 days of gas, 32 days of electricity, and 35 days of water**.



Transportation is the main contributor of swimming impact

This analysis of travel distance and transportation mode relies on existing studies and our internal understanding of swimmer travel patterns. It is important to note that travel for competitions was not considered due to its statistically low contribution (less than 1% impact) across the user base.

Hypothesized travel distances to swimming pools and their annual CO2 impact

Water explorer	15 km by car (3 people by car)	>	**12** kg CO_2e per year
Wellbeing swimmer	14 km by individual car (60%) or public transportation (40%)	>	**83** kg CO_2e per year
Performant swimmer	10 km by individual car (70%) or active mobility (30%)	>	**136** kg CO_2e per year

Key equipment impact by swimmer profile

Each profile is characterized by one product that drives the majority of the equipment's environmental impact.









Fitness

Main environmental stakes Climate impact (CO_2) Biodiversity (soil sealing)

Key finding for fitness

The lack of adequate data on average fitness profiles necessitated defining the profiles using internal expert knowledge. The CO_2 impact analysis for fitness encompasses weight training practices, whether performed at home, in a gym, in a hybrid setting, or with or without competition.

Annual CO2 impact of 6 fitness ways

Minimalist fitness at home



55 kg CO_2e / year

Intensive fitness at home



90 kg CO_2e / year

95% of the impact is attributed to equipment, and a maximum of 5% to food.

Moderate gym member



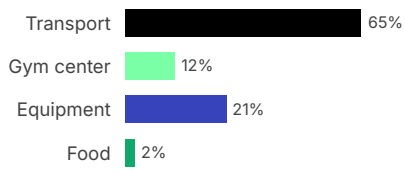
165 kg CO_2e / year

Intensive hybrid



240 kg CO_2e / year

The CO2 impact, is distributed homogeneously across moderate gym members, intensive gym members, and intensive hybrid users:



Intensive gym member



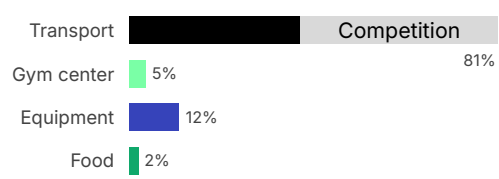
340 kg CO_2e / year

Intensive gym member with competitions



590 kg CO_2e / year

2 competitions account for up to 40% of the total annual impact:

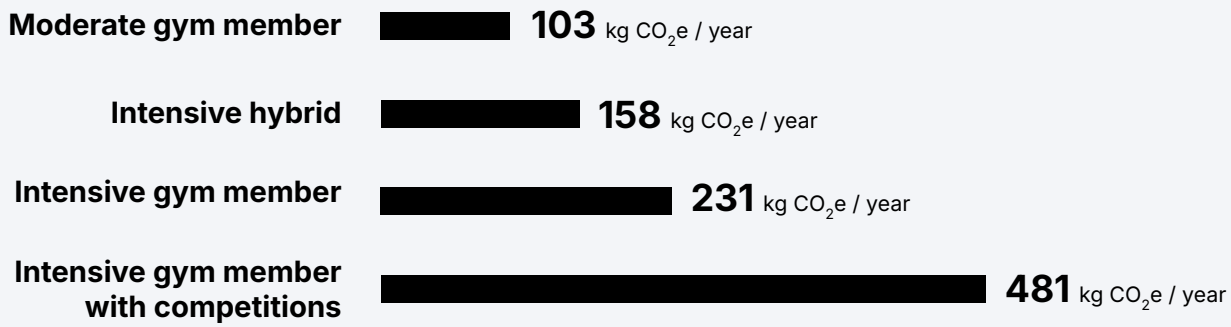


Transportation is the primary impact of gym-based fitness

Given the lack of a specific study on gym transportation, three location-based scenarios are employed:

- a 2 km walk/bike for big city residents,
- a 5 km car journey for suburban/medium city residents, and
- a 10 km car journey for those in the countryside/small towns.

For competitions, a 1,000 km travel distance is assumed, split equally between car and public transportation.



Fitness equipment impact: key contributors?

Textile stands out as a major contributor to CO_2 impact, with the equipment involved accounting for a significant 40 to 82% depending on the specific profile.





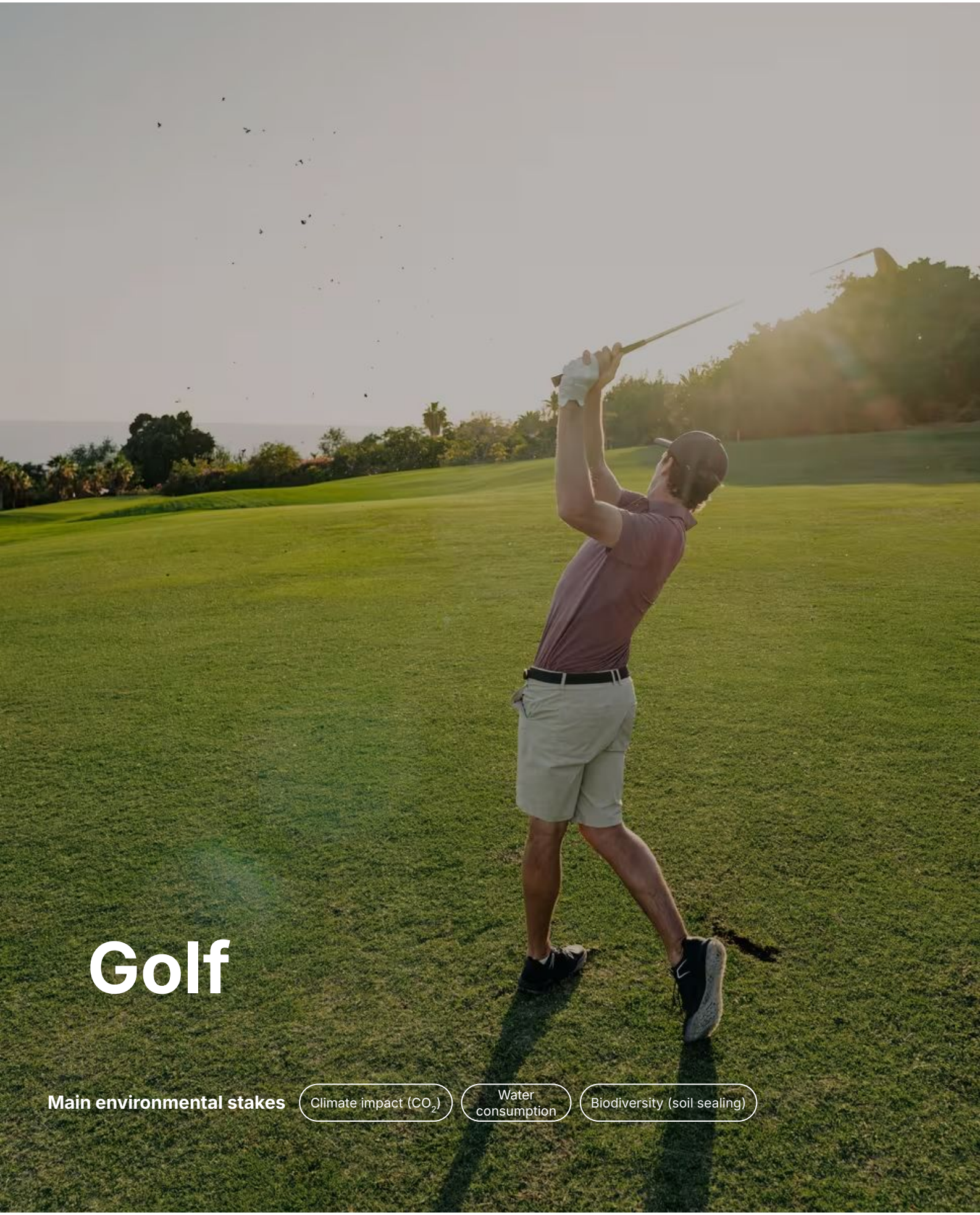
Considering the high usage rate by all gym members, the CO_2 impact of the gym's **hard equipment** (machines, bars, etc.) equates to **2 kg of CO_2e per person**.

First Steps?

Reducing sport's carbon footprint



Why buy when you can experience?
Rental services for heavy equipment, like rowers with a 200 kg CO_2e impact, lets you diversify your training while contributing to a more circular economy.



Golf

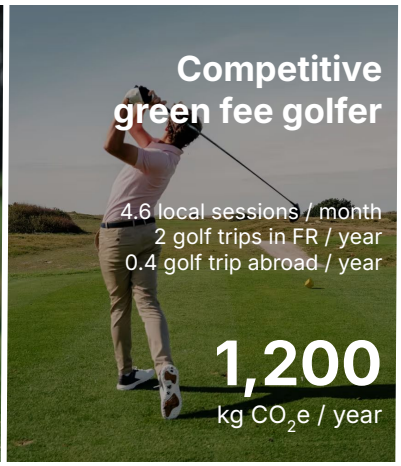
Main environmental stakes Climate impact (CO_2) | Water consumption | Biodiversity (soil sealing)

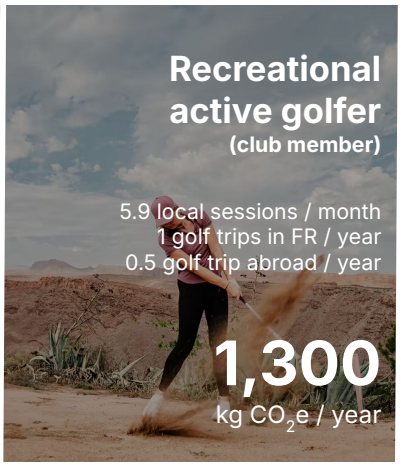
Key finding for golf

To assess the environmental impact of golfing, data was collected through cooperation with the French Golf Federation, which surveyed its members to understand travel behaviors related to training, competitions, and golf holidays. This was complemented by DECATHLON's expertise on equipment and a specific carbon footprint study of the Merignies golf club infrastructure.

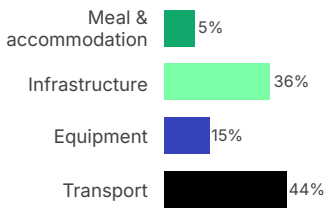
The CO_2 impact of one year of golf practice per player

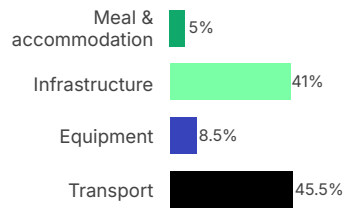


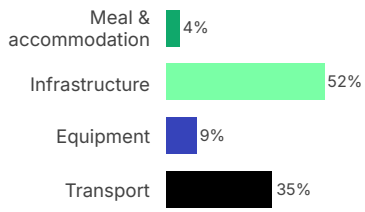


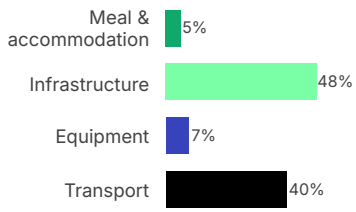












Lawn mowers: a key environmental factor in golf courses

Golf course maintenance is resource-intensive, and the frequent use of **lawn mowers** represents a significant contributor to their environmental and infrastructure impacts. Maintaining a golf course to the standards expected by players requires **other resources such as water, fertilizers, pesticides, energy** for various operations (pumping for irrigation, powering clubhouse facilities), golf labor.

It's worth noting that the golf industry is increasingly **exploring more sustainable practices**, such as using electric or hybrid mowers, implementing water conservation techniques, adopting integrated pest management strategies, and selecting more resilient turfgrass varieties.

Lawn mowers fuel and other machinery contribute to **23%** of the CO2 impact of the golf infrastructure

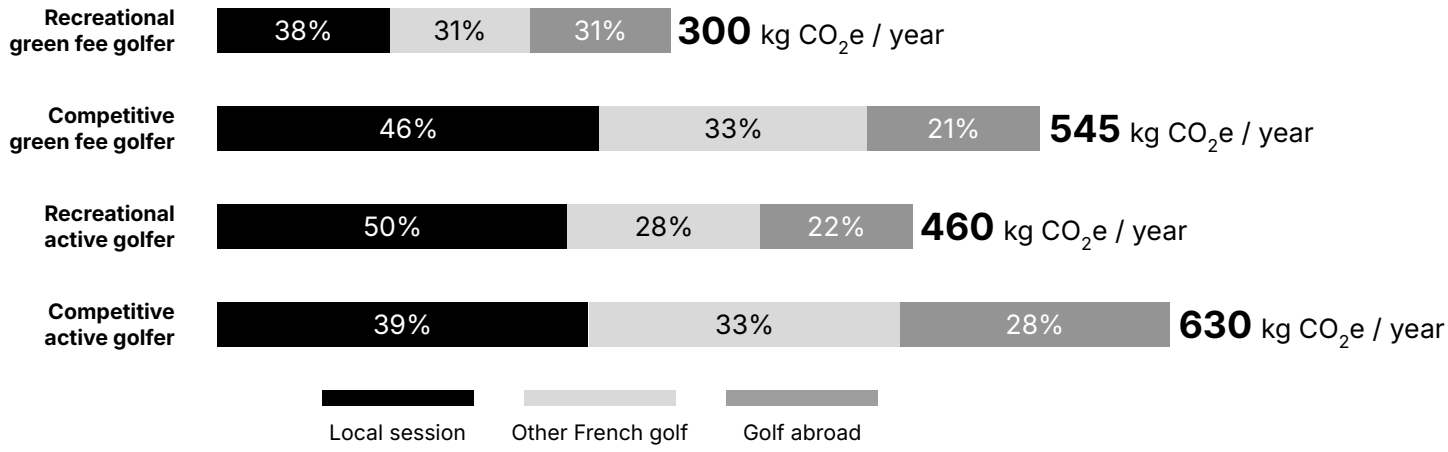
For one golf session, the infrastructure account for 6 kg CO_2e (9 holes)

1 golf course over a year consumes as much **water** as the **volume of 10 Olympic swimming pools**

Deep dive into the transportation impact of golf practice

The primary factors determining a golfer's transportation carbon footprint are international golf trips (57% to 78% of which are made by plane) and overall travel volume, both of which strongly correlate with their level of competition.

Annual CO_2 emissions from golf transportation by session type

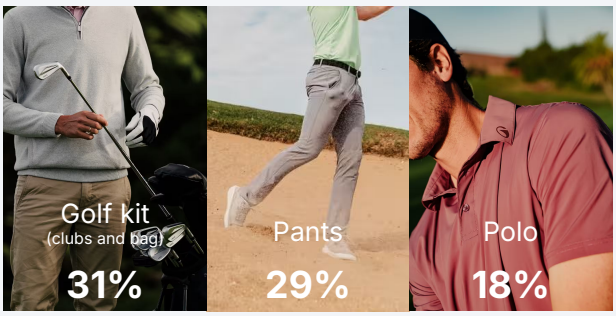


For a competitive active golfer, the four sessions played during vacations represent only 5% of annual games but account for 28% of their total transportation carbon footprint.

Golf equipment impact: what are the key contributors?

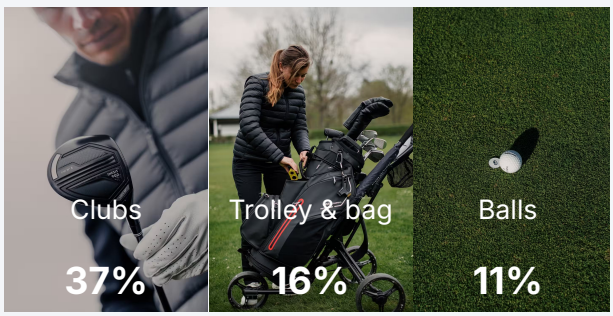
Green fee golfer

102 kg CO_2e / year



Active golfer

114 kg CO_2e / year



First Steps?

Reducing sport's environmental footprint

A golfer's first step towards supporting biodiversity can be to choose to play at golf courses recognized with a high-level **"Golf for Biodiversity" label** - supported by the French Golf Federation - for their commitment to environmental actions. A growing number of golf courses are becoming biodiversity hotspots in peri-urban or monoculture areas.



03

Perspectives

Perspectives

Understanding the scale of sports' environmental impact is crucial for projecting a more responsible sports practice. To maximize the benefits of sports for both people and the planet, sports must evolve by simultaneously considering multiple factors:

- **Decarbonization** to contribute, like all human activities - to limit the global temperature rise to 1.5°C by the end of the century
- **Protecting the biodiversity**: ecosystems provide essential services that meet our vital needs, and they also underpin our activities. Food, water, a regulated climate, the observation and enjoyment of natural landscapes, and the wonder of wildlife... Nature offers numerous services for sports. Respecting living organisms and ecosystems is a responsibility that concerns us all
- **Climate adaptation**: the practice of sports will be increasingly impacted by the consequences of climate change, including more frequent heat waves, rising temperatures, air pollution, and reduced snowfall...

But how to start? What is the starting point for catalyzing the transformation towards more sustainable sports practices? There are several potential directions to pursue.

Raise awareness and (re)connect with Nature: foundations for environmentally conscious sports

To foster a sustainable sports culture, two essential levers emerge. Firstly, **awakening awareness through knowledge**: understanding the major environmental impacts of sports, through clear information and factual data – such as that presented in this report – is crucial. Secondly, encouraging a **sensory (re)connection with nature can strengthen engagement**.

These two approaches, rational understanding and an emotional bond with the living world, complement each other and nurture the desire to act to reduce our environmental footprint and initiate beneficial actions for the planet.



Focus on what matters most for the environment

Regardless of the sport, four key areas require reduction of the environmental impacts: transportation, infrastructure, equipment, and biodiversity pressures. Transformation efforts should focus on these hotspots.

Rethinking mobility



Recognizing that transportation is the largest contributor to sports' climate footprint, a multi-faceted approach is necessary, including:

- Encourage active mobility adoption: promote walking and cycling as a mutually advantageous practice for sports, environmental sustainability, personal well-being, and economic efficiency
- Promote the use of low-carbon transportation: prioritize the use of rail, carpooling, and public transit
- Implement geographically optimized event scheduling: develop event planning strategies that minimize transportation dependencies.

A world of existing solutions



The sports community has already initiated a range of actions aimed at mitigating the environmental impact of sports practices. These examples highlight the power of shared inspiration to accelerate the adoption of sustainable sports practices.

- **Low carbon transportation for a trail running races**: 40% of the bibs are allocated to runners who come to the Mont-Blanc Marathon by train or bus

- **Sport professional athletes** have a powerful opportunity to inspire new visions of sustainable, low-impact practices. 440 Olympians, from over 90 countries and representing over 50 sports, have signed an open letter calling on the International Olympic Committee - IOC - to make caring for our planet their top priority. A collective of around fifty committed athletes has come together and taken action through the "Climate Sport Camp" and "Sport 4 Future"

- The development of **new environmental labels** aims to increase awareness, encourage the adoption of solutions, and showcase leading examples: "engaged event" label from the charter of 15 eco-responsible commitments of the Ministry of Sports, Train Runner Foundation, Golf for Biodiversity in France...

- Energy consumption optimization is being implemented in **indoor sports infrastructure**, including swimming pools, basketball courts, and fitness centers, to reduce both operating costs and carbon emissions.

Decarbonizing the sport equipments

Sustainability remains at the core of DECATHLON's operations, with continued progress towards its environmental commitments.

For the third consecutive year, the company has decoupled its revenue growth from its absolute carbon emissions, continuing to grow while reducing its carbon footprint. Since 2021, **DECATHLON has reduced its carbon emissions by -13%**, further reinforcing its long-term decarbonization trajectory aligned with the Paris Agreement and the Net Zero standard.

To accelerate this transition, DECATHLON is strengthening collaboration with industrial partners to decarbonize production processes and scale circular business models. Extending product lifespans remains a priority, making it easier than ever for customers to reuse, repair, and recycle their equipment. In 2024:

- 48.5% of products sold benefited from an ecodesign approach (+10pts compared to 2023).
- 1.35 million second-hand products were sold.
- 3 million products were repaired across 1,730 repair workshops.
- DECATHLON further cemented its leading position in rental services, holding 50% market share in Italy and Spain.



At the same time, DECATHLON significantly reduced its single-use plastic packaging by 53.29%- cutting usage from 2,646 tonnes to 1,236 tonnes.

Source: Decathlon Group's 2024 Performance

Closing the loop:
the sports world can no longer wait for a circular revolution

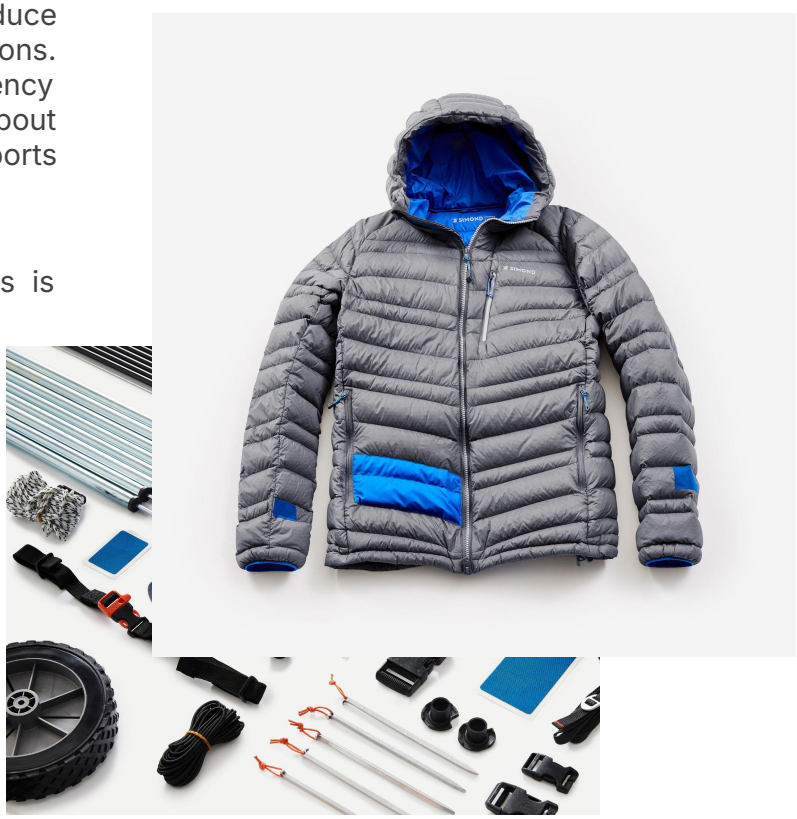
Focusing on a **circular economy** – keeping gear in play longer – is key to a sustainable future for sport activities. Think less waste, more durability, smarter choices, and **easier access to the right equipment when you need it**.

What circularity means for sport enthusiasts?

- **Gear that Lasts**: demand durable, repairable equipment designed to go the distance. Less waste, more value for you.
- **Smart choices at purchase**: look for gear made with recycled or renewable materials. Support brands designing for the future, making it easier to recycle your old equipment.
- **Repair, Reuse, Share, Rent**: before buying new, can your current gear be fixed? Consider renting equipment for activities you do infrequently. This saves you money, storage space, and the environmental impact of owning rarely used items. Explore the second-hand market for quality, affordable options.
- **Give gear a second life**: when it's truly done, use take-back programs or donate / resell to keep materials in use.
- **Sustainable sport events**: support events that prioritize recycling, reduce single-use plastics, and minimize waste. Your participation encourages better practices.

Circularity in sports will contribute to reduce resource consumption, pollution, and emissions. It offers economic benefits through efficiency and new opportunities. Ultimately, it is about building a sustainable and resilient sports ecosystem for future generations.

The time for a circular revolution in sports is now.

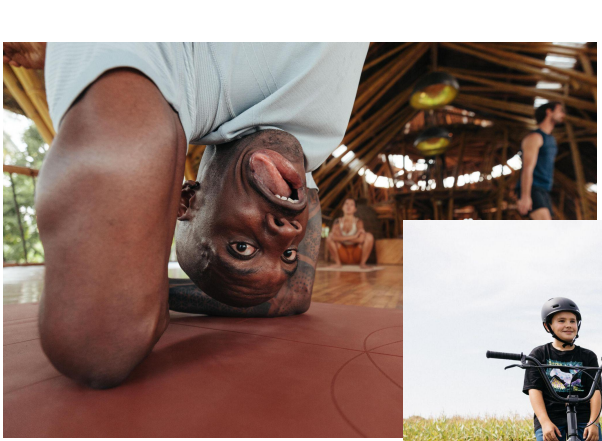


Change the game redefining sporting ideals

The practice of sports is constantly evolving, shaped by cultural nuances, diverse user needs, and emerging societal trends. These shifts present a unique opportunity to redefine sports, embracing sustainability and minimizing our environmental footprint. Key initiatives include:

- **Localized sports**: reducing reliance on long-distance travel by promoting community-based sports and facilities, close-to-home sports and facilities including the promotion of urban outdoor sports facilities
- **Cycling synergy**: leveraging cycling to enhance endurance and performance in other sports like football, promoting a cross-training approach to reduce the usage of the car for short distances
- **Circular equipment:** promoting durable, repairable, and recyclable sports equipment, and fostering circular models through rental, repair, second-hand markets, and recycling
- **Biodiversity awareness**: fostering a deeper connection with nature through outdoor sports, educating participants about local vulnerabilities of the ecosystems used in their sports
- **Sport practice as a service for the environment**: using sports as a platform to champion environmental protection through initiatives like plogging and citizen science projects during hikes that are thoughtfully designed to gather valuable data without causing further environmental intrusion or negative impacts
- **Holistic performance**: shifting the paradigm of sporting success to equally value athletic prowess and environmental stewardship, and transforming our collective sporting imagination to move beyond a 'playground' perception of nature towards genuine environmental respect and integration

By integrating these principles, we can cultivate a more sustainable and responsible approach to sports, ensuring its benefits for generations to come.









Conclusion

Conclusion: Ready, Set, Go!

Sport, a universal language, possesses an extraordinary capacity to **transform lives**, fostering physical and mental well-being across generations and society. This is further amplified by the public health benefits of regular activity, which can reduce healthcare-related CO_2 emissions by lowering rates of illness and hospitalization, although a comprehensive societal analysis linking these impacts is still needed.

However, this study underscores a critical reality: **the environmental footprint of sports is undeniable**: transportation, infrastructure, equipment, biodiversity pressure... Each sport has unique impacts. Indeed, it can consume a significant portion (up to 65%) of an individual's annual carbon budget for a 1.5°C pathway, demanding action.

In the meantime, **climate change**, already reshaping our world, directly impacts the very landscapes where we play, compete, and find solace in athletic pursuits. From vanishing snowfields to increasingly frequent extreme weather events and air pollution, the future of sports hinges on our ability to act now.

The good news is that **solutions exist** and are deployed all over the world and offer a path toward a more sustainable future. Yet, the challenge before us is systemic, demanding a **collective effort from sport unions, athletes, fans, organizations, and industries alike**. This includes how sports are organized, from venue selection to event management, requiring a **commitment** from governing bodies to promote environmental responsibility.

The urgency is clear: the faster the sports movement embraces this transformation, the greater our ability to mitigate the impacts of climate change and safeguard the future of sports for all. And let's not forget the power of individual choices. As athletes and enthusiasts, we can each play a crucial role. Consider your mode of transportation to the next game or training session – a simple shift can make a significant difference.

Ultimately, ensuring the long-term vitality of sports calls for more than just addressing its footprint; it invites us to **reimagine sport's very place in our lives and society**. This means weaving it into a decarbonized, nature-friendly daily existence. It requires educating participants about their impact, promoting responsible environmental behaviours, and critically, fostering a profound respect for the natural world – inspiring us to **experience nature through sport, rather than simply using it as a backdrop.**

Let us rise to this challenge with the passion and dedication we bring to the field. This is an opportunity to **broaden our collective appreciation of 'sport'**, shifting the dominant narrative beyond an overemphasis on performance and competition to fully celebrate and support the wide array of motivations - like well-being, social connection, and the simple joy of movement - that already drive so many of us. By doing so, we can **cultivate a virtuous circle where sport, society, and a thriving environment support and enrich one another**, guaranteeing sustainable and fulfilling ways to practice for all.

Let's all commit to playing sport responsibly, in harmony with our planet, ensuring that the joy, health, and spirit of sports flourish for generations to come.



Let's all Play Sport Responsibly – for ourselves, and for nature!

Let’s Start to Play Sport Responsibly!

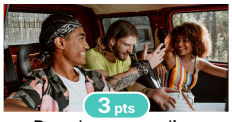
Assess and create your own low environmental impact sport practice

For each category below, select the description that best reflects your typical sports practices and note the corresponding points. If a category does not apply to you (e.g., "Events" if you don't participate in any, or "Infrastructure" if your practice requires none), simply give yourself 0 points for that category. Then, sum your points to see your overall environmental impact score.

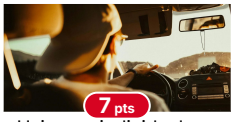
Mobility



Only walking, cycling, frequent train/public transport use



Regular carpooling (at least 3 people), or electric vehicle



Using an individual car for some trips (e.g., to the sports venue)

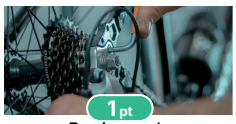


Systematic use of an individual car (combustion engine) for all sports travel

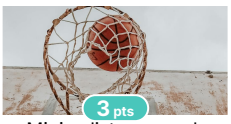


Air travel at least once every 2 years to practice / event

Sport equipment



Buying only second-hand, repairing or renting equipment



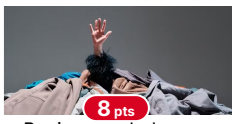
Minimalist approach (fewer items)



Buying less impacting equipment made from ecodesign approach



Frequent purchase of new sports gear



Buying regularly new equipment, particularly new collections

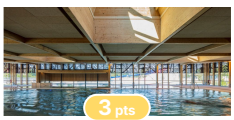
Event & Infra.



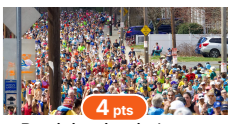
Supporting only local, smaller-scale events/facilities



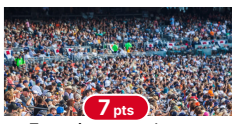
Choosing events / facilities with clear sustainability efforts



Participating in events / using facilities with some environmental considerations

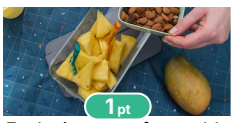


Participating in larger events / using well-established facilities



Favoring very large, international events/complex infrastructures

Hydration & Food Waste



Exclusive use of reusable containers, composting (if possible)



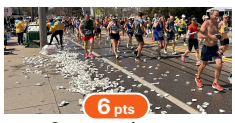
Majority use of reusable containers, systematic sorting for recycling



Occasional use of disposable containers, partial recycling



Frequent use of disposable containers, little to no recycling



Systematic use of over-packaged products, no recycling, littering

Sport nutrition (before, during and after)



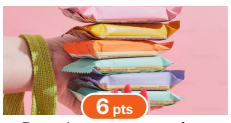
Local, seasonal, organic, bulk, mostly plant-based food, no food waste



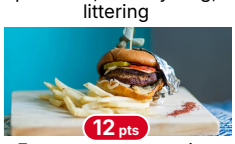
Snacks and meals prepared at home with chosen ingredients (quality, origin)



Varied diet, moderate meat consumption, focus on nutritional balance



Regular consumption of industrial products (energy bars, drinks, processed foods)

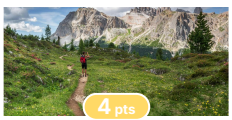


Frequent consumption of meat-based snacks / meals before, during and after sport activity

Biodiversity



Practicing in designated areas/trails



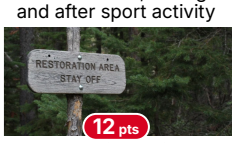
Rarely going off-trail



Practicing during night or twilight in the mountain



Regularly going off-trail



Ignoring trail closures/disturbing wildlife



Your actions are fully compatible with the environment.
You’re making a lot to minimize your impact, congratulations!

You're on the right track.
You're thinking about your impact and making positive choices. Let's keep going!

You're exploring ways to make your practice more environmentally responsible.
A few adjustments can make a real difference.

You’ve a lot of actions available to make your practice less impactful.
Let’s start!

Note: This grid is intended as an educational and indicative self-assessment tool, not constituting a certified environmental label. It offers simplified, broad estimations to help athletes easily understand, reflect on the environmental impact of their sports practices, and identify actions that have a lower impact.



Appendices

Clarifications

The term "**sport practice**" refers to engaging in physical activity with the goal of maintaining or increasing fitness, improving well-being, or enhancing performance, whether in a competitive or recreational context.

The study covers nine sports with multiple practice styles. **Specific user experiences** were defined based on DECATHLON's expertise. Therefore, the results are limited to these specific descriptions and do not represent a generic or average practice.

For **transportation and accommodation** emission factors, the modelling relies on the 'Empreinte' database from ADEME.

For **equipment impact**, DECATHLON's internal experts defined a typical set of items for each user experience and selected the best-selling DECATHLON product as a specific reference for each item, rather than using an average.

The **life cycle assessment** of our sporting goods follows the Product Environmental Footprint (PEF) method, a cradle-to-grave approach that covers all stages from raw material extraction through end-of-life (incineration and landfilling).

This report is based mainly on **French data** (emissions factors and surveys), therefore, results could be considered as more accurate in a French context than a global context. An exception is made for football, for which internal experts from Morocco, China, India, and Thailand provided data for this study.

Main assumptions - 1

Running

Profile	• A specific survey was conducted in 2024 to assess the transportation habits of runners for attending training sessions and races. • DECATHLON conducted this survey through its Cocreation platform to recruit participants. A total of 491 usable responses were collected, with 79% from 'Active Runners' (386 responses) and 21% from 'Performance Runners' (105 responses). • The CO_2 impacts from transportation were calculated directly using data from this survey.
Equipment renewal and food consumption	• Assumptions regarding equipment replacement frequency and food consumption during training and races are based on the expertise of Decathlon specialists. • The standard set of equipment (panoply) for a runner was defined by selecting one specific, most representative DECATHLON product reference for each type of item.
Transport	• Distances and modes of transportation for each type of session (training, races) were determined based on the survey results. • For car travel, a carpooling scenario was assumed, with an average vehicle occupancy of 2.25 people (the French national average occupancy rate).
Events	• To estimate emissions from event organization (referred to as the "organization's share"), the following calculation was made: The average number of events a runner from each profile (Active or Performance) participates in annually was multiplied by an emissions factor for event organization (hypothesis: 30 kg CO2eq / event / runner; same data whatever the profile or the race). • This factor was derived from the carbon footprint assessment ('Bilan Carbone') of a major running event. This organizational footprint encompasses emissions from overall event organization, logistics, the on-site race experience, partnerships, hospitality, and entertainment.
Accommodation	• Emissions from race accommodation were calculated by multiplying the average number of races (requiring overnight stays) attended by each runner profile by the emission factor for an average hotel night. (based on Ademe reference frame).

Road cycling

Profile	• Cyclist profiles were segmented based on DECATHLON customer data into three categories: 'Recreational Cyclists,' 'Active Cyclists,' and 'Performance Cyclists.' • The typical cycling frequencies and types of activities for each profile (such as the annual number of rides, training sessions, or competitions) were determined based on expert knowledge.
Transport	• Data on distances traveled and modes of transport used to reach various cycling locations were sourced from a survey conducted by Decathlon in early 2025. • The survey gathered 512 responses, of which 361 were considered usable for this analysis.
Equipement	• The standard equipment set for road cycling was defined by DECATHLON teams. • Data regarding equipment renewal frequency and the proportion of users purchasing each component were obtained from the aforementioned survey. • The annual CO_2 impact of a bicycle was calculated considering that 30% of users purchase second-hand bicycles. This practice extends a bicycle's lifespan (e.g., from an average of 5 years for a new bike used by a 'Performance Cyclist' to 11 years if the bike is subsequently sold and used on the second-hand market). This extended lifespan alters the amortization period for the bicycle's manufacturing CO_2 emissions.
Event	• For organized events, the number of official vehicles involved (e.g., support staff cars, course marshal vehicles, ambulances, volunteer vehicles) was estimated based on discussions with the French Cycling Federation (FCF). • The share of an event's total organizational emissions attributable to each participant (the 'organization's share') was then calculated using data from interviews with the FCF.
Food	• Nutritional requirements for racing and training scenarios were defined in consultation with the FCF and subsequently validated by DECATHLON experts.

Main assumptions - 2

Urban cycling

Profile	• Four distinct urban cyclist profiles were defined by in-house experts, drawing upon previous internal studies.
Transport	• Cycling frequency and average distances covered per trip for each profile were defined by in-house experts.
Equipement	• The standard equipment set for each urban cyclist profile, along with equipment renewal frequencies, was defined by in-house experts. • The environmental impact of necessary spare parts and consumables (e.g., inner tubes, brake pads) is included in the overall equipment assessment. • For electric bikes (e-bikes), the electricity consumption for charging is also included in the impact calculation.
Comparative economic benefit (vs. car use)	In addition to assessing the CO2 impact of urban cycling, potential economic savings from using a bicycle instead of a car were considered. The basis for estimating these savings includes: • A reference fuel price of €1.70 per liter, • Additional car running costs (covering maintenance, depreciation, insurance, and other expenses) estimated at €0.176 per kilometer.

Football

Profile	• For France, data were primarily sourced from the French Football Federation (FFF) and The Shift Project. • For the other countries included in the study, data were validated by local experts in each respective nation, based on their specific knowledge of the national context.
Transport	• Distances and modes of transport were sourced from the FFF for France, and from internal experts for other countries. • This approach for other countries was adopted due to challenges in obtaining comprehensive questionnaire data, unlike in France where DECATHLON's Cocreation platform could be utilized.
Equipement	• The standard equipment set for players in France was defined by in-house experts. For other countries, a renewal frequency ratio was applied, calculated using each country's Gross Domestic Product (GDP) relative to that of France. • 'Summer' and 'winter' equipment ranges were considered; the 'winter' range was deemed applicable only to France and China due to the climatic conditions in the other studied countries. • Additionally, club-provided equipment was defined for France; for other countries, an estimate was derived using a ratio based on the average number of members per club.
Infrastructure	• Infrastructure data for France were sourced from the FFF, Empreinte database and the Shift Project study. Various types of pitches (e.g., natural grass, stabilized surfaces, concrete, artificial grass, and city playgrounds) were considered, along with associated facilities such as bleachers, changing rooms, and parking lots. • The total surface area (m^2) for these facilities was estimated per country and then divided by the number of players in that country to determine an average surface area share per player. • Energy consumption for these infrastructures was also factored in, calculated by estimating total energy use per country and dividing it by the number of registered players.
Food	• For food-related impacts, only consumption by spectators and staff during matches was considered. Data from The Shift Project were used as a basis for France, with adjustments made by local experts for other countries as deemed necessary.
Event	• Emissions related to the attendance of players and accompanying persons (staff, supporters) at football activities were considered. The following spectator-to-player ratios, derived from FFF carbon footprint data, were applied: 0.25 for training sessions, 1.0 for home matches, and 1.5 for away matches.

Main assumptions - 3

Hiking

Profile

- For hiking, a Decathlon Cocreation questionnaire was distributed, yielding 735 responses.
- This survey aimed to understand hikers' behaviors, including whether their typical outings were day hikes, weekend trips, and/or holiday excursions.
- The typical frequency of practice was determined using the median value from the responses, as this metric was considered more representative of common behavior and less skewed by outliers than the mean (average).

Transport

- Distances covered and modes of transport were derived from the aforementioned Cocreation questionnaire.
- For train and air travel, the CO2 impact of associated bus transfers required to reach the hiking start point was also included.
- For car travel, an average vehicle occupancy rate of 2.25 persons was assumed, based on the French national average.

Equipement

- The standard equipment set and its renewal frequency were determined by in-house experts.
- For hiking boots, specific assumptions were made:
  - An average annual distance of 300 km per hiker was considered (e.g., 20 outings of 15 km each).
  - The typical lifespan of a pair of hiking boots was estimated at approximately 900 km of use.
  - Based on these figures, and applying a conservative approach (e.g., to account for varying usage patterns or to ensure a cautious estimate), a renewal period of 4 years was adopted.

Accomodation

- The proportion of hiking trips involving different types of overnight accommodation (itinerant hiking) was determined from the Cocreation questionnaire.
- This was based on responses indicating stays 'In a refuge,' 'In a tent (wild bivouac),' or 'In a tent (designated bivouac/campsite).'
- The average CO2 impact per overnight stay was then calculated by multiplying the proportion of each accommodation type by its corresponding emission factor, sourced from ADEME's Base Empreinte emission factor database.

Food

- The proportion of hikers typically carrying and consuming their own food during hikes was determined from the Cocreation questionnaire.
- The specific quantities and types of food assumed per person per day were then standardized based on common consumption patterns or expert assumptions.

Main assumptions - 4

Skiing

Profile

- This analysis focuses solely on resort-based skiers.
- Practice frequencies were assigned based on the distance between the skier's home and the resort.
- These frequencies were derived from a questionnaire administered from October 4 to October 11, 2024, which collected 1,082 responses.
- **Note**: This questionnaire was launched on DECATHLON's Cocreation platform, and the majority of respondents were from France.
- This demographic bias likely affects the transport impact assessment, as international visitors travelling longer distances would typically have a higher propensity for air travel.
- In contrast, this survey found that only 1% of respondents living 800 km or more from resorts reported using air travel for their ski trips.

Transport

- Distances traveled and modes of transport were derived from the aforementioned questionnaire.
- For rail and air travel, the impact of associated bus transfers required to reach the ski resorts was included.
- It should be noted that the car emission factors used do not account for potential additional fuel consumption typical of mountain driving conditions.
- An average vehicle occupancy rate of 2.25 persons for car travel was assumed, based on the French national average.

Equipement

- The equipment considered is based on a women's range with a frequency of renewal defined on the basis of the questionnaire.
- Consistent with industry data showing 70% of skis are rented, our model assumes skiers from distant regions exclusively use rental equipment (skis, poles, and boots). A probable ratio is then applied to skiers from other origins.

Reference to external study for other impacts

- All other resort-related emissions, including those from infrastructure (e.g., ski area operation, snowmaking, local authority services related to tourism), were sourced directly from the 'Utopies' study, 2023, which provides an overall impact assessment per skiing day.

Swimming

Profile

Three distinct swimmer profiles were defined by in-house experts to represent the primary types of swimming participation:

- The Water Explorer: Swims primarily to learn new skills and enjoy recreational time in the water.
- The Wellbeing Swimmer: Swims to enhance physical and mental well-being, focusing on the sensory experience of being in the water.
- The Performance Swimmer: Engages in regular training with the specific goal of improving swimming technique and overall performance.

Transport

- Travel distances to swimming locations, practice frequencies, and modes of transport for each profile were defined by in-house experts.
- For instance, the 'Performance Swimmer' profile assumes 8 sessions per month at a pool located 5 km from home (a 10 km round trip per session), with 30% of these journeys made by bicycle and 70% by private car.

Infrastructure

- Data from various sources – including French sector-specific guides, along with case studies from swimming pool management groups and technical experts – were consolidated and harmonized to establish an average energy consumption profile (covering gas and electricity) for swimming pool operations.

Equipment

- The standard equipment set for each of the three swimmer profiles was defined by in-house experts.
- This definition was informed by a recent study analyzing the typical accessories used by swimmers during their practice.

Main assumptions - 5

Fitness

Profile	• Fitness participant profiles were defined by DECATHLON's in-house fitness experts to represent different types of fitness practices. • Each profile is characterized by training frequency and whether the individual attends a gym.
Transport	• Transport scenarios for the different profiles were defined by considering three types of living locations: 1) large cities, 2) suburbs or medium-sized cities, and 3) small towns or rural areas. • Each location type was associated with a typical travel distance and mode of transport (e.g., for large cities, a 2 km round trip by walking or cycling was assumed). A questionnaire was then used to determine the distribution of fitness participants across these different living locations. • For fitness competitions, an average round trip distance of 1,000 km was assumed, with 50% of travel by car and 50% by public transport.
Individual equipement	• Product ranges for each profile, renewal frequencies for each item, and the number of items per product type were defined by in-house experts. • For example, a 'moderate gym member' profile is assumed to renew their training shoes every 5 years and own two pairs.
Shared gym Equipment	• The average number of fitness machines in a typical gym, along with their associated renewal frequencies, was defined by in-house experts. • The resulting annual environmental impact of a gym's machines was then divided by the average number of gym members to allocate a share of this impact to each participant.
Infrastructure	• For infrastructure impacts, only electricity consumption (data sourced from an Enedis report on French sports complexes) and gas consumption (data from a study of a sports complex in Wallonia, Belgium) were considered. • The total annual environmental impact of a fitness facility (from this energy consumption) was divided by the average number of members to allocate a share of this impact to each participant.

Golf

Profile	Four distinct golfer profiles were defined in collaboration with the FFGolf (French Federation of Golf) to represent the different types of golfing participation: • The Green Fee Golfer - No Competition: I play occasionally, paying a green fee each time without being a member of a specific club. • The Green Fee Golfer - With Competition: I play occasionally, paying a green fee each time without being a member of a specific club. I may participate in a few friendly competitions. • The recreational active golfer (club member): I am a club member and play mainly for leisure, possibly participating in some friendly or club competitions. • The competitive active golfer (club member): I am a club member and regularly participate in competitions (regional, national, etc.). The numbers of golfer for each profile are based on FFGolf 2024 studies. • Green fee golfer: 274,500 players (254,000 recreational and 20,500 competitive players) • Active golfer: 273,500 players (157,000 recreational and 116,500 competitive players) A specific survey was conducted in September 2025 to assess the transportation habits of golfers for attending training sessions, competitions and holidays (in France and abroad). DECATHLON conducted this survey through its Cocreation platform to recruit participants. A total of 968 usable responses were collected, with 81% club members and 19% from green fee golfers.
Transport	• The CO2 impacts from transportation were calculated directly using data from the Cocreation survey.
Infrastructure	• The assessment of infrastructure-related impacts is primarily based on data from a detailed carbon footprint analysis conducted at the Mérignies Golf Club. • This site-specific data is contextualized and supplemented by broader industry information and benchmarks from the 'Panorama du golf en France' study, providing a comprehensive overview of typical infrastructure impacts for golf courses in France.
Equipment	• The climate impact of golf equipment is calculated based on defined player profiles and their associated standard sets of equipment ('panoplies'). • The composition of these equipment sets, typical renewal frequencies for each item (e.g., clubs, balls, apparel), and the average number of items used per product type have been determined through consultation with DECATHLON's in-house golf experts.
Accommodation	• Impacts related to accommodation for golf-related travel (specifically for weekend trips and longer vacations) are estimated based on the number of nights spent in hotel establishments. • The carbon emission factors for these overnight stays are sourced from the ADEME Base Empreinte.

Our playmakers: recognizing their contributions



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Pôle Ressources National Sports de Nature

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DECATHLON

ABOUT DECATHLON

A global multi-specialist sports brand catering for everyone from beginners to top athletes, DECATHLON is an innovative manufacturer of sporting goods for all skill levels. With 101,000 teammates and 1,750 stores worldwide, DECATHLON and its teams have been working ever since 1976 to fulfill an ongoing ambition: Move people through the wonders of sport, to help them be healthier and happier in a sustainable future.

SPORT 1.5

ABOUT SPORT 1.5

Sport 1.5 is a consulting agency focused on the ecological transition within the sports sector. The agency assists sports organizations, communities, equipment suppliers, clubs, athletes, and associations in adapting to climate change. A core principle is the transparent sharing of their knowledge and methodologies through various channels. Their services encompass environmental studies, CSR & adaptation strategies, athlete support, training and advocacy.

