

EuroVelo 1 - Atlantic Coast Route Bike counts analysis 2019-2022



Study Scope Summary

The data analysis performed for the European Cyclists' Federation in the frame of the AtlanticOnBike project involved collecting and analyzing data from 143 Eco-Counter bicycle counting sites along the 11,000 km long EuroVelo 1 – Atlantic Coast Route. The data used in the study was collected from January 1st, 2019 to December 31st, 2022.

The report is divided in two distinct sections. The first is a longitudinal analysis, which tracks the evolution of activity on the route between 2019 and 2022. This analysis is performed on 101 counting sites, each with data during the entire four-year period. A second section is based on a spatial analysis of counting sites. Using only 2022 data, 143 counting sites on the route had a complete year of counts and are included in the analysis.

The data were validated and reconstructed, where necessary, to ensure complete and accurate counts for the entire time period of each analysis. The analysis includes multiple time perspectives including yearly seasonal, weekly and hourly time resolutions. The analysis is conducted on all sites aggregated together, as well as by country. This comprehensive approach allowed for a thorough understanding of cycling patterns and trends along the Atlantic Coast Route.

The aggregated analysis (all sites without differentiating by county) includes a comparison between rural and urban sites. This type of analysis was only possible to perform on all sites together as few counting sites along the Atlantic Coast Route are in urban areas. A definition of rural and urban sites is included in the appendix. Rural sites are assumed to be more associated with leisure cycling while urban sites experience a mix of utilitarian and leisure cycling activity. This assumption is supported by the hourly profiles at each site; urban sites tend to have a more important commuting peak on weekdays in the AM while rural sites have activity concentrated in the afternoons and on weekends.

In the longitudinal study, due to a limited number of counting sites, it was decided to combine Portugal with Spain. Note that Norway, with the fewest number of sites, was not combined because it has no proximate neighbouring countries. The analysis for Norway is performed on a single counting site and should not be considered with the same weight as the analysis in other countries.

France was further broken down into departments in the spatial study. This analysis, with a finer spatial resolution, is only possible because of the large number of counting sites in France.

Longitudinal Analysis – 2019-2022

Description

In this analysis, data from 101 counting sites, situated in the six countries traversed by the Atlantic Coast Route, are analyzed. The results include daily averages of all counters, individual country or group of countries. In addition, the analysis consists of the yearly and seasonal evolution of activity compared to the base year of 2019, prior to the COVID-19 pandemic.

Main Takeaways

France and Norway experience greater seasonal effects than the UK, Ireland, Spain and Portugal (pg 4). France and Norway have strong summer peaks in bicycle activity and both have winter retention rates between 15-20%.

Bicycle activity has grown in urban sections of the route more consistently than in rural areas (pg 5). From 2020 to 2022, urban locations have had 10% to 14% more activity than in 2019, whereas **in rural areas, the growth figure has varied more by year (+2% in 2020, +15% in 2021 and +9% in 2022)**. Pandemic travel restrictions and extreme weather have had a greater impact on rural bike activity than in urban areas.

Almost every season from 2020 to 2022 demonstrated significant growth in bike counts along the route when compared to the same season in 2019 (pg 5). The only exceptions are the spring of 2020, which was a period of lockdown for most European countries; and summer 2022, which included a prolonged and extreme heat wave in all countries along the Atlantic Coast Route.

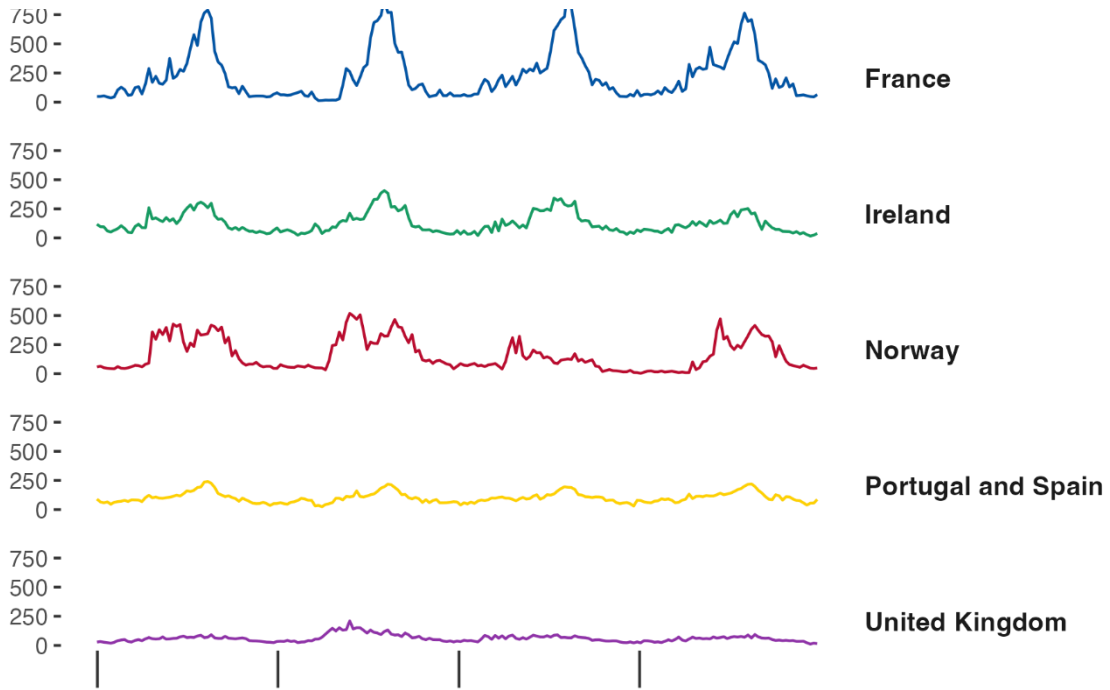
In rural locations associated with leisure cycling, counts have significantly increased in the fall season (+39% and +35% in 2021 and 2022 vs fall 2019), which could be attributed to warmer temperatures during these periods, facilitating post-summer tourism. Consistent increases compared to 2019 have also been experienced in winter and spring (pg 5).

Rural sites experience considerably more seasonal effects than urban sites. In the summer months, the average rural site experiences the same level of activity as urban sites. However, in the shoulder season and especially the winter, urban sites have significantly more activity.

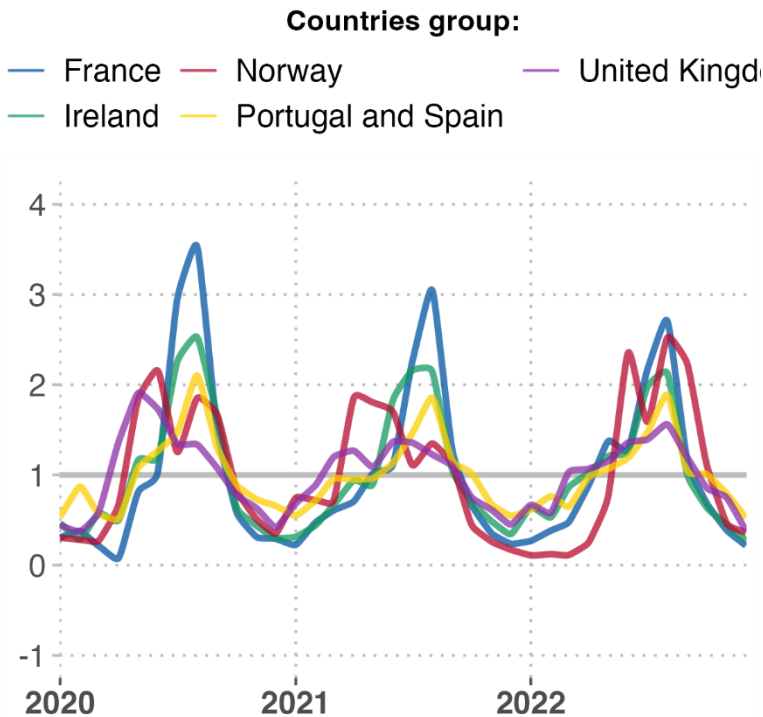
The hourly profile graphs (pg 6) illustrate that the use of the route is not dependent on the day of the week and that usage peaks in the late morning and in the early afternoon. It is also evident that **weekend usage is significantly greater than weekday usage.**



Weekly Daily Average



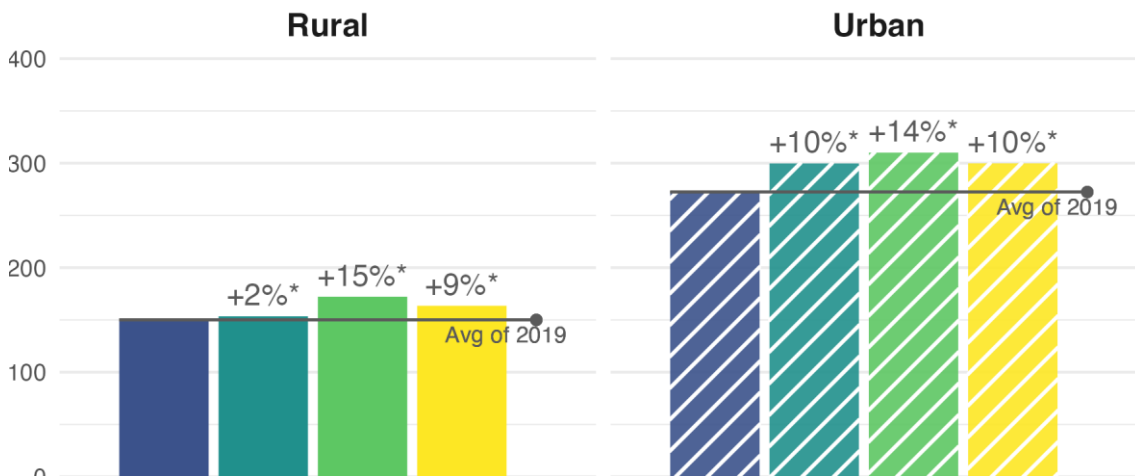
Monthly Daily Factors



The monthly daily factors is an analysis comparing the average daily counts each month since 2020 to the average daily counts of 2019 per group of countries. The graph shows the high increase of bike counts in France the summer after the lockdown. At its peak, bike activity on the route in France was 3.5X the typical day of 2019.

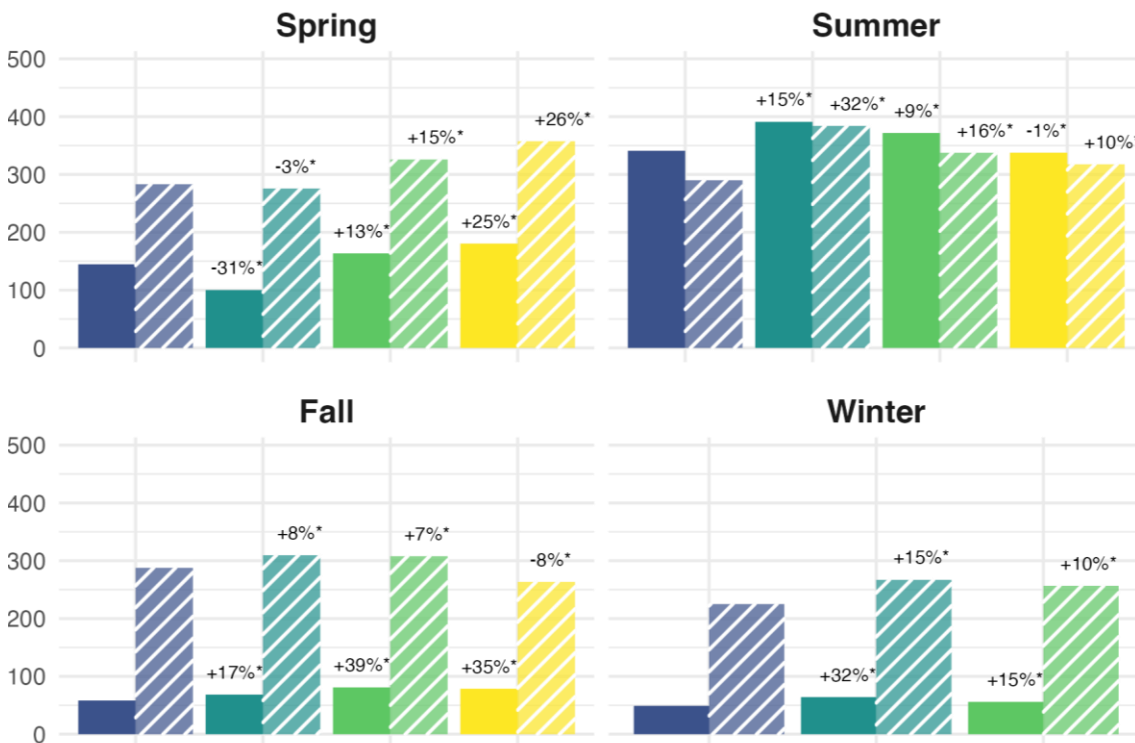


Yearly Comparison



Based on average daily bike counts

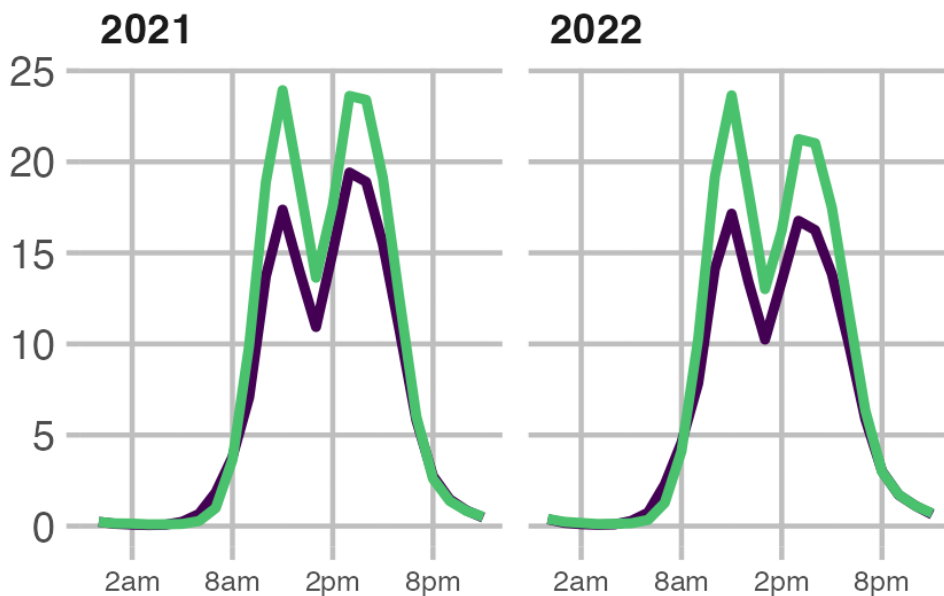
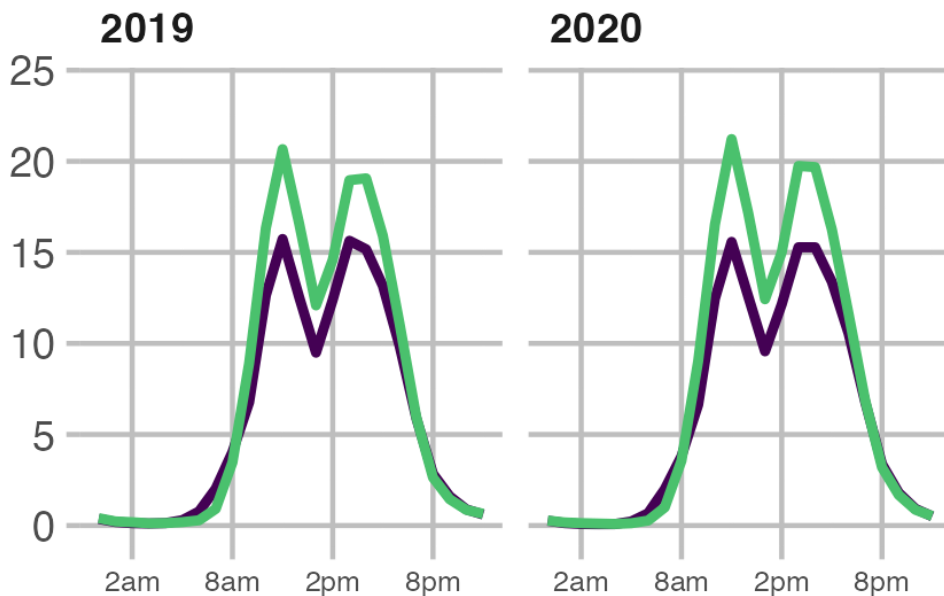
Seasonal Comparison



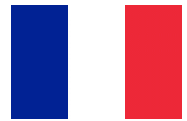
* Compared with the average daily counts of 2019



Average Hourly Counts by Year

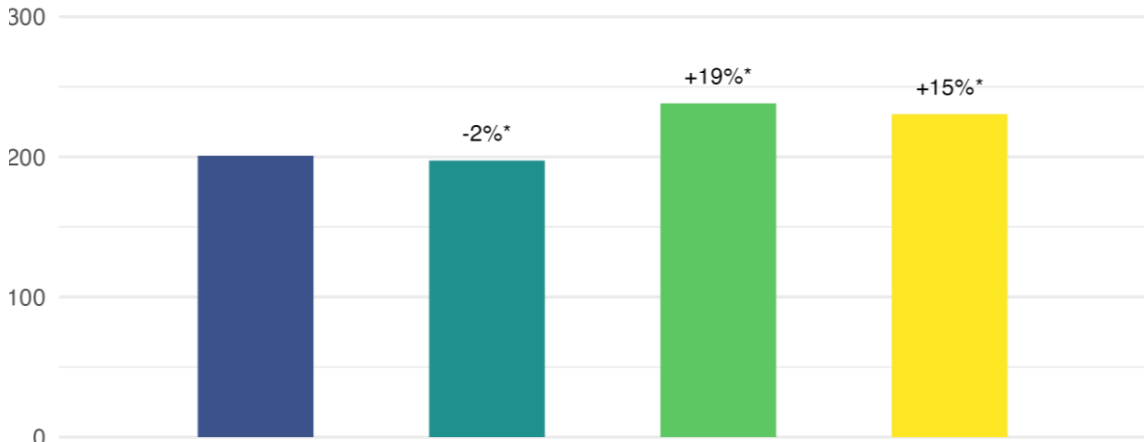


— weekday
— weekend



Yearly Comparison

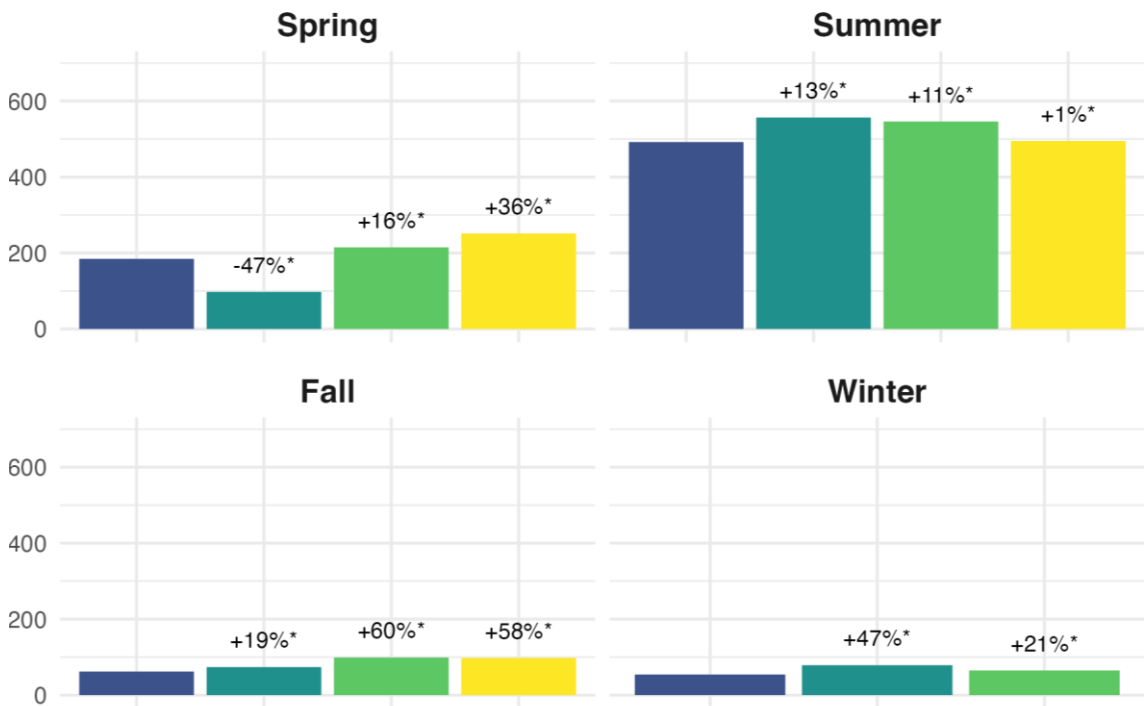
France



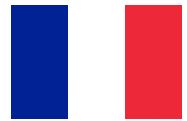
In daily bike counts per counter

Seasonal Comparison

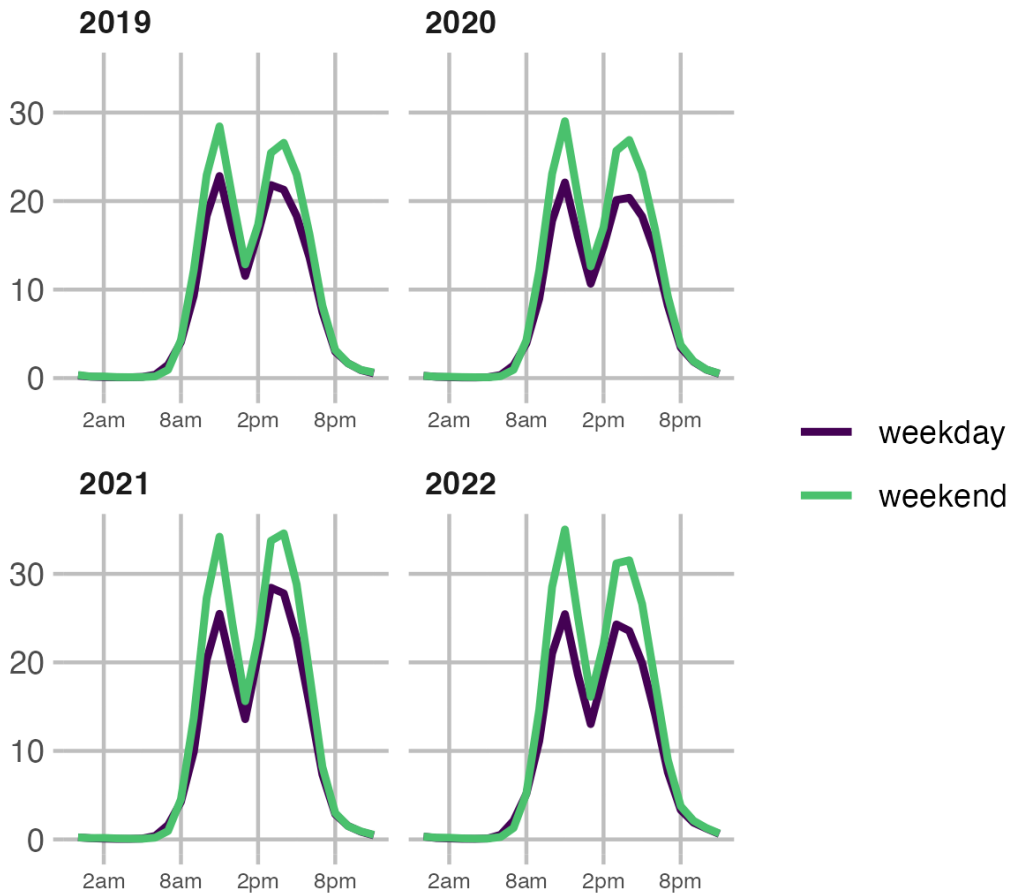
France



* Compared with the average daily counts of 2019



Hourly Counts France



Main Takeaways - France

Compared with the other countries of the study, France exhibits a higher degree of seasonality. On average, counts in the winter represent 15% of summer values.

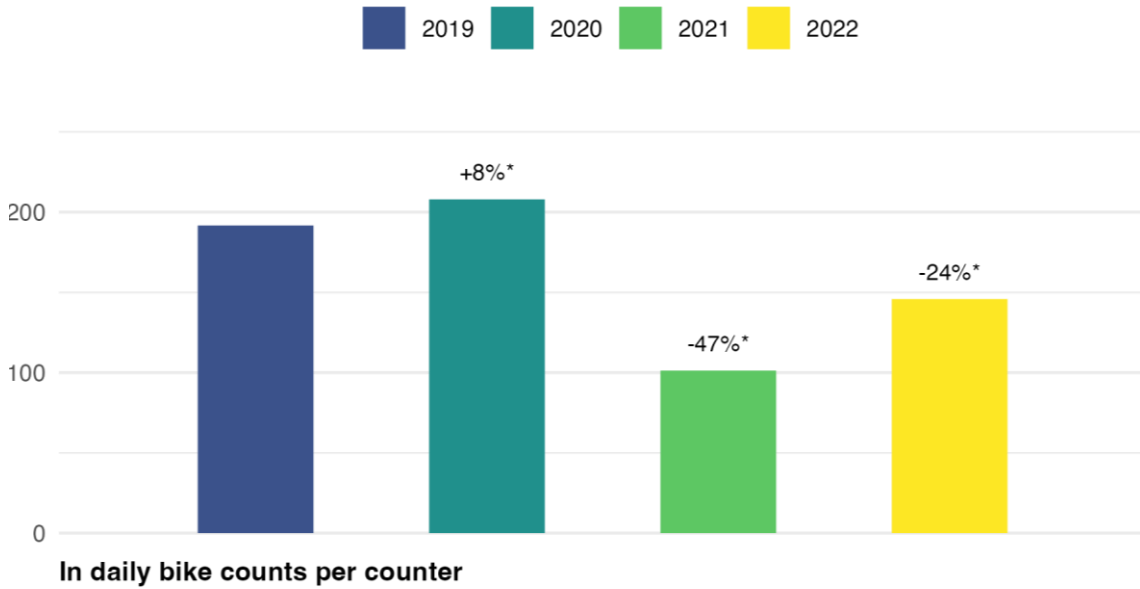
With the exception of the spring of 2020, a period impacted by strict lockdowns, all other seasons have demonstrated significant growth compared to 2019.

Remarkable growth in bicycle activity has been observed in the fall (60% in 2021 and 58% in 2022).

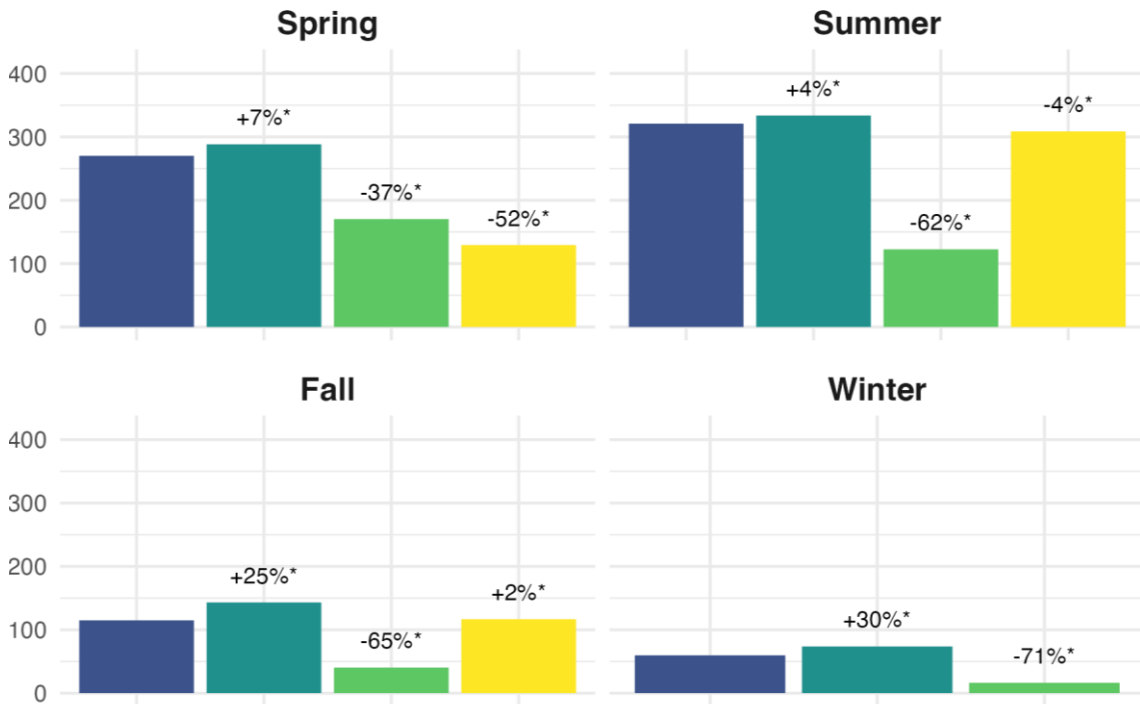
The hourly profiles show a late morning and early afternoon peak in activity with a break taken each day during lunch. On average, weekend activity has been 15% greater than weekday activity between 2019 and 2022.



Yearly Comparison Norway



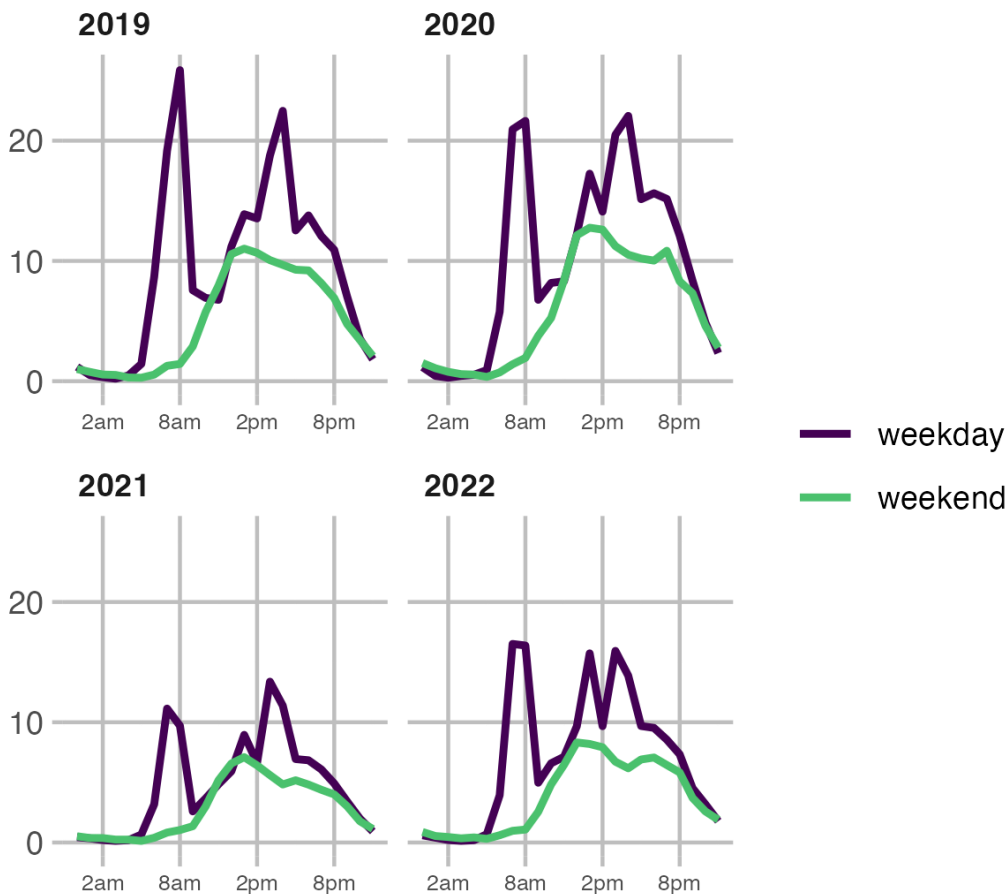
Seasonal Comparison Norway



* Compared with the average daily counts of 2019



Hourly Counts Norway



Main Takeaways - Norway

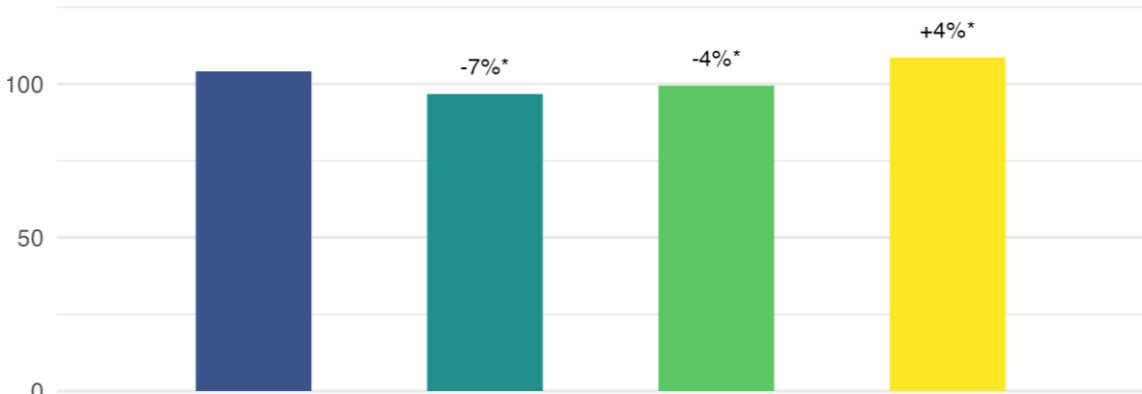
This analysis is based on data from a single validated counting site. Thus, less weight should be placed on the results in Norway.

Unlike other countries studied, Norway had less severe travel restriction measures during the initial wave of COVID-19 in 2020, but experienced a decrease in bicycle activity associated with the pandemic later in 2021.



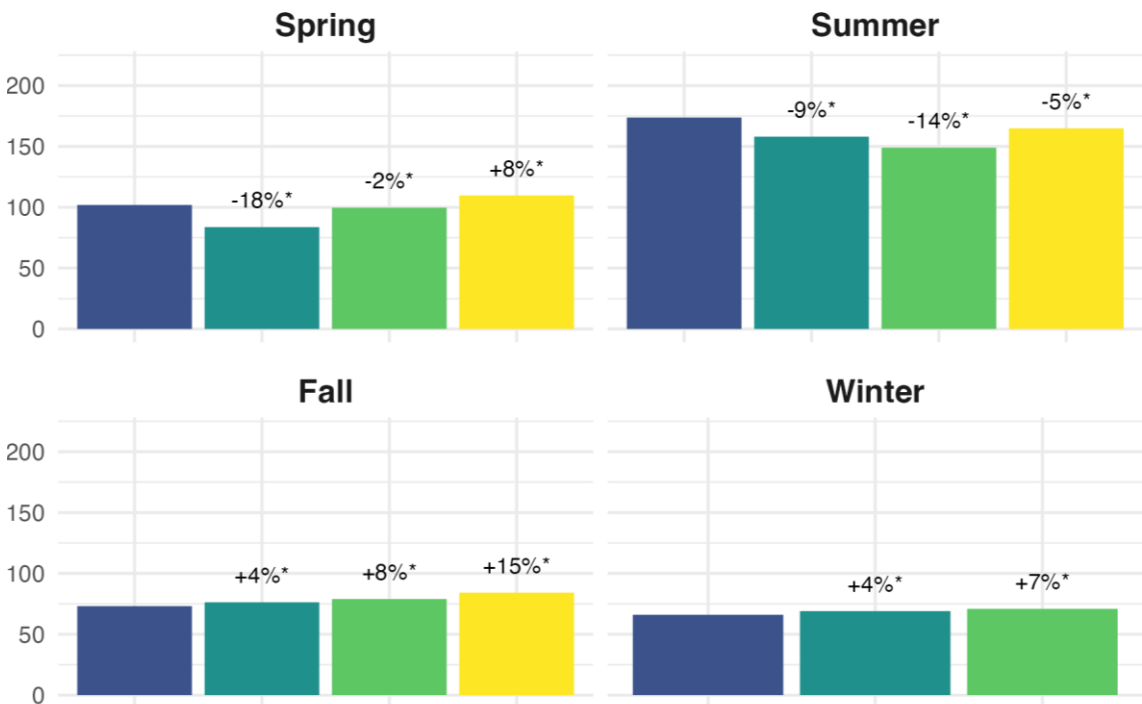
Yearly Comparison
Portugal and Spain

2019 2020 2021 2022



In daily bike counts per counter

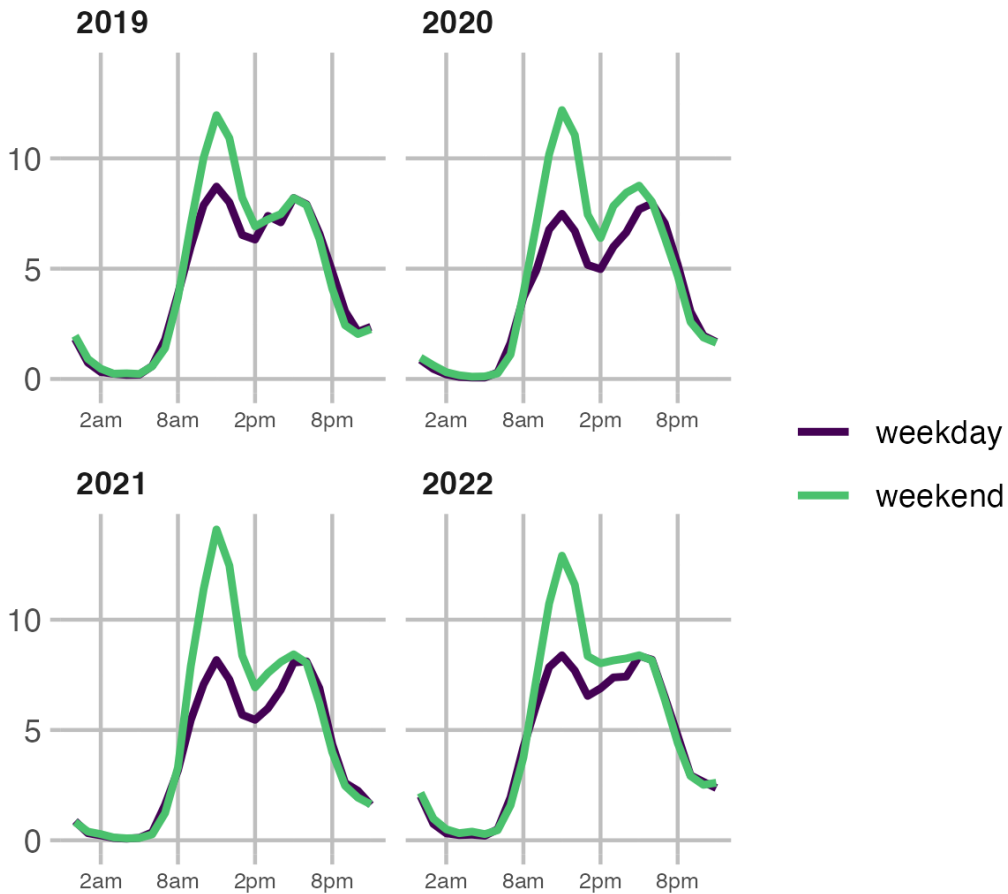
Seasonal Comparison
Portugal and Spain



* Compared with the average daily counts of 2019



Hourly Counts Portugal and Spain



Main Takeaways – Spain and Portugal

Compared to France and Norway, this southern part of the Atlantic Coast Route exhibits less seasonality. Winter bicycle counts typically represent 50% of summer counts.

From 2019 to 2022, a slight decrease in usage is observed during the summer, with an increase observed in the fall and winter. This trend might be due to weather changes, including hotter summers and warmer shoulder seasons making cycle tourism more attractive in the shoulder season months.

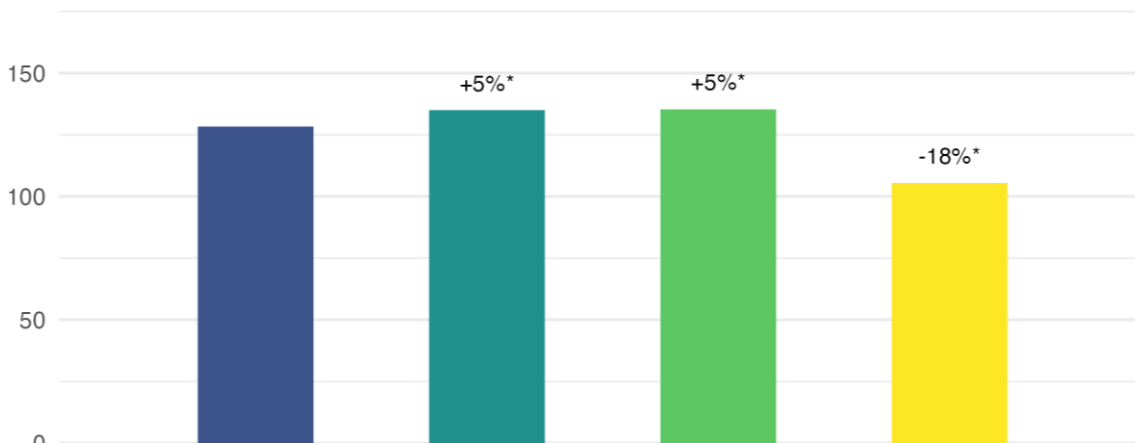
Examining the hourly profile data, a strong morning peak is noted, while the afternoon peak is less pronounced. The higher activity in the AM may be due to the extreme heat in the late afternoons throughout the summer months.



Yearly Comparison

Ireland

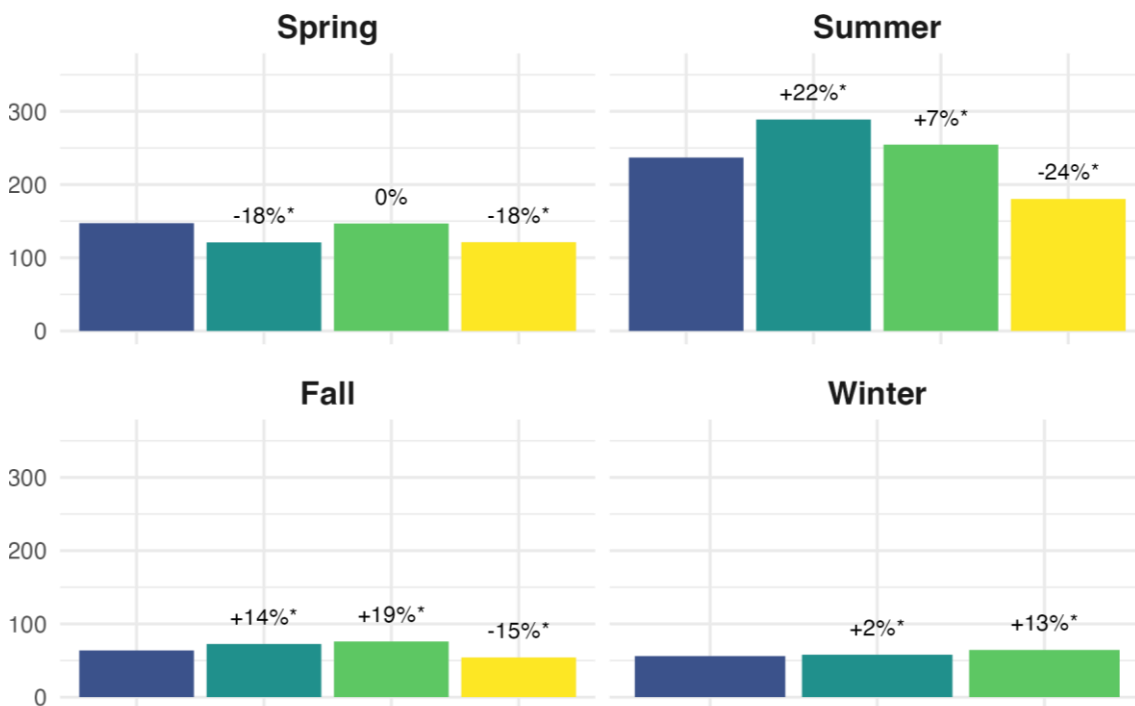
2019 2020 2021 2022



Based on average daily bike counts

Seasonal Comparison

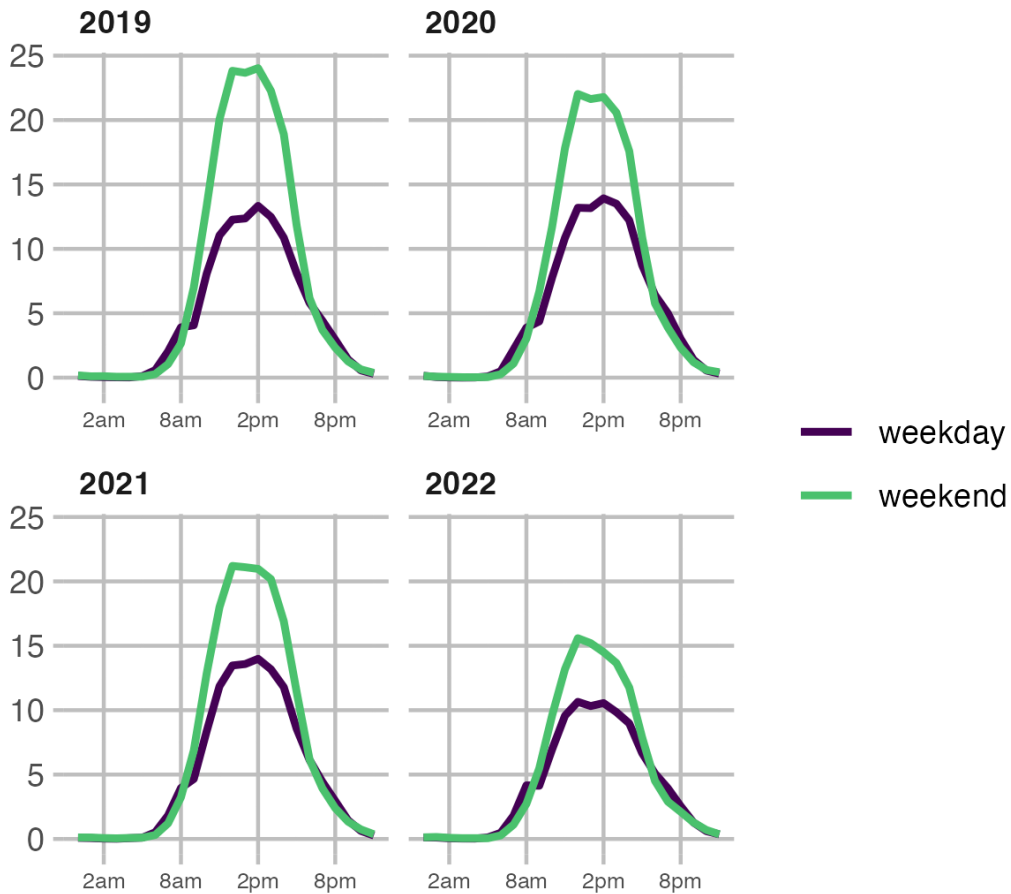
Ireland



* Compared with the average daily counts of 2019



Hourly Counts Ireland



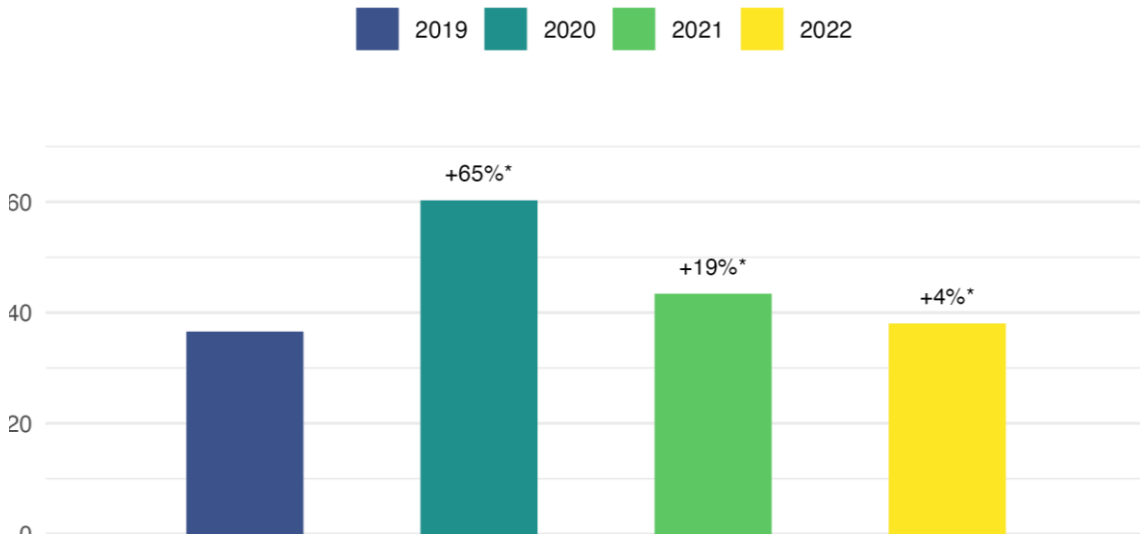
Main Takeaways – Ireland

During the COVID-19 outbreak in 2020, usage saw a significant increase (+22% in the summer and +14% in the fall) that extended into 2021 (+5% for all of 2021 vs 2019). In 2022, usage experienced an 18% decrease (vs 2019), with a 24% decrease in the summer. Weekend bike activity appears to have decreased significantly compared with previous years.

The hourly profiles in Ireland confirm that the rural counting sites are almost exclusively used for recreational and leisure purposes. Activity peaks each day between noon and 3PM.

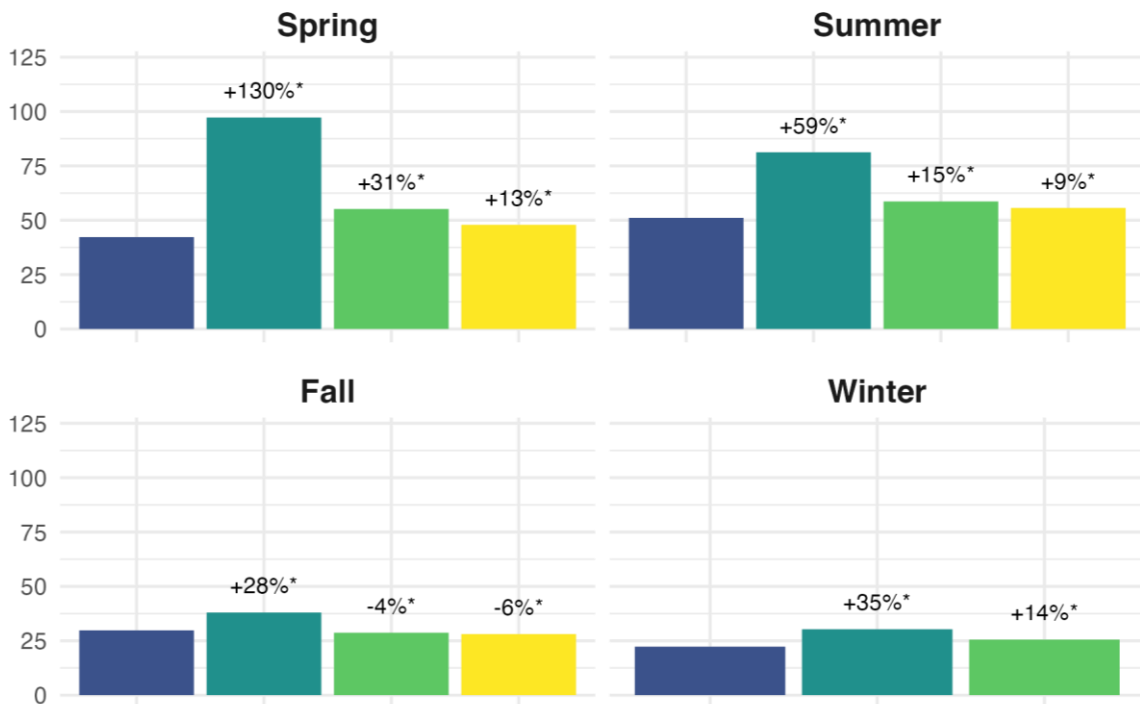


Yearly Comparison
United Kingdom



Based on average daily bike counts

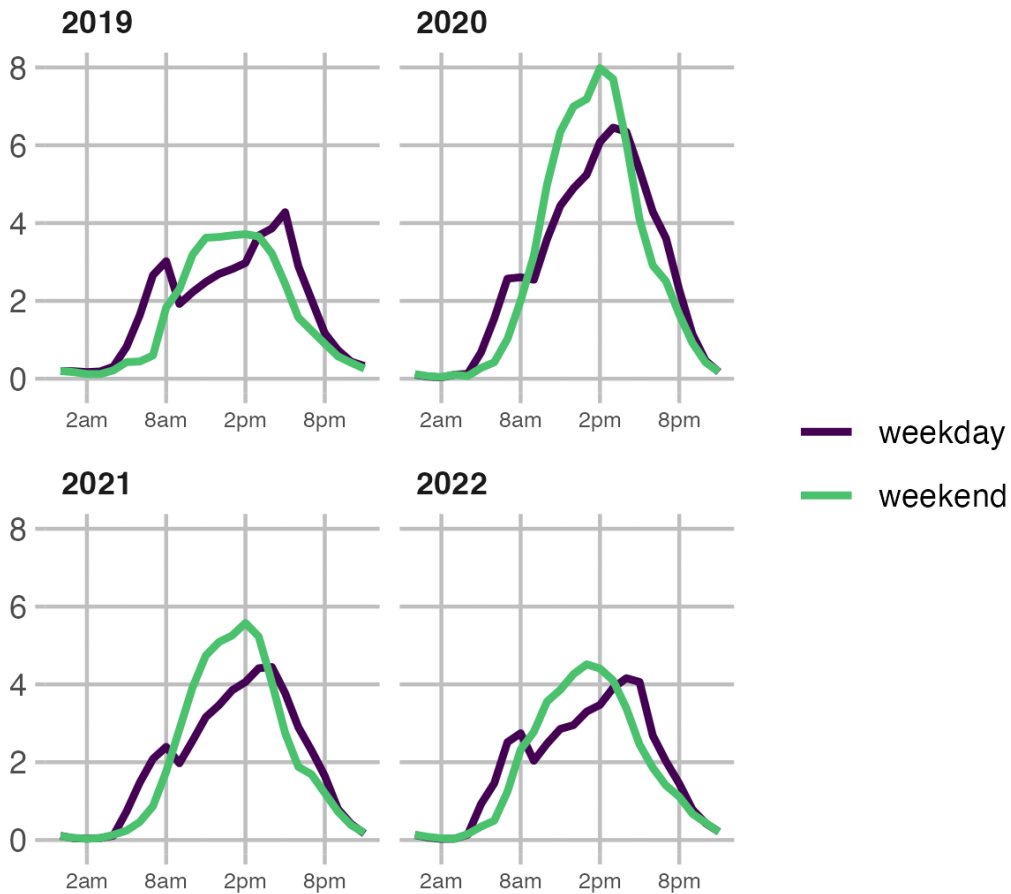
Seasonal Comparison
United Kingdom



* Compared with the average daily counts of 2019



Hourly Counts United Kingdom



Main Takeaways – United Kingdom

During the COVID-19 outbreak in 2020, usage saw an explosive increase (+65%) that extended into 2021 (+19%), albeit with a more moderate growth. In 2022, usage had dropped back down to approximately 2019 levels (+4% vs 2019).

The trends are vastly different across seasons. Spring counts in 2020 were an incredible 130% above levels in 2019. Since the initial pandemic bike boom, significant increases in cycling (10-15%) have been apparent in the spring, summer and winter with a modest decrease in the fall.

A small morning commuting peak in 2019 disappeared in 2020 and 2021 but has re-emerged in 2022.

Spatial Analysis - 2022

Description

In the spatial analysis, 42 sites were added to the sample of counting sites used in the longitudinal analysis; thus totalling 143 sites. Each site included in this section has complete data for the entire year of 2022. A daily and seasonal analysis was completed for each country allowing for comparison between countries.

Two heatmaps of activity are included in this section. The first map depicts the usage of the Atlantic Coast Route in 100 km segments based on the available counting site locations. Segments are excluded from the analysis when no counting points are present. The second map focuses specifically on France, with counting sites aggregated by department. This scale of analysis is possible in France only because of the large number of counting sites with complete data.

Main Takeaways – All Countries in 2022

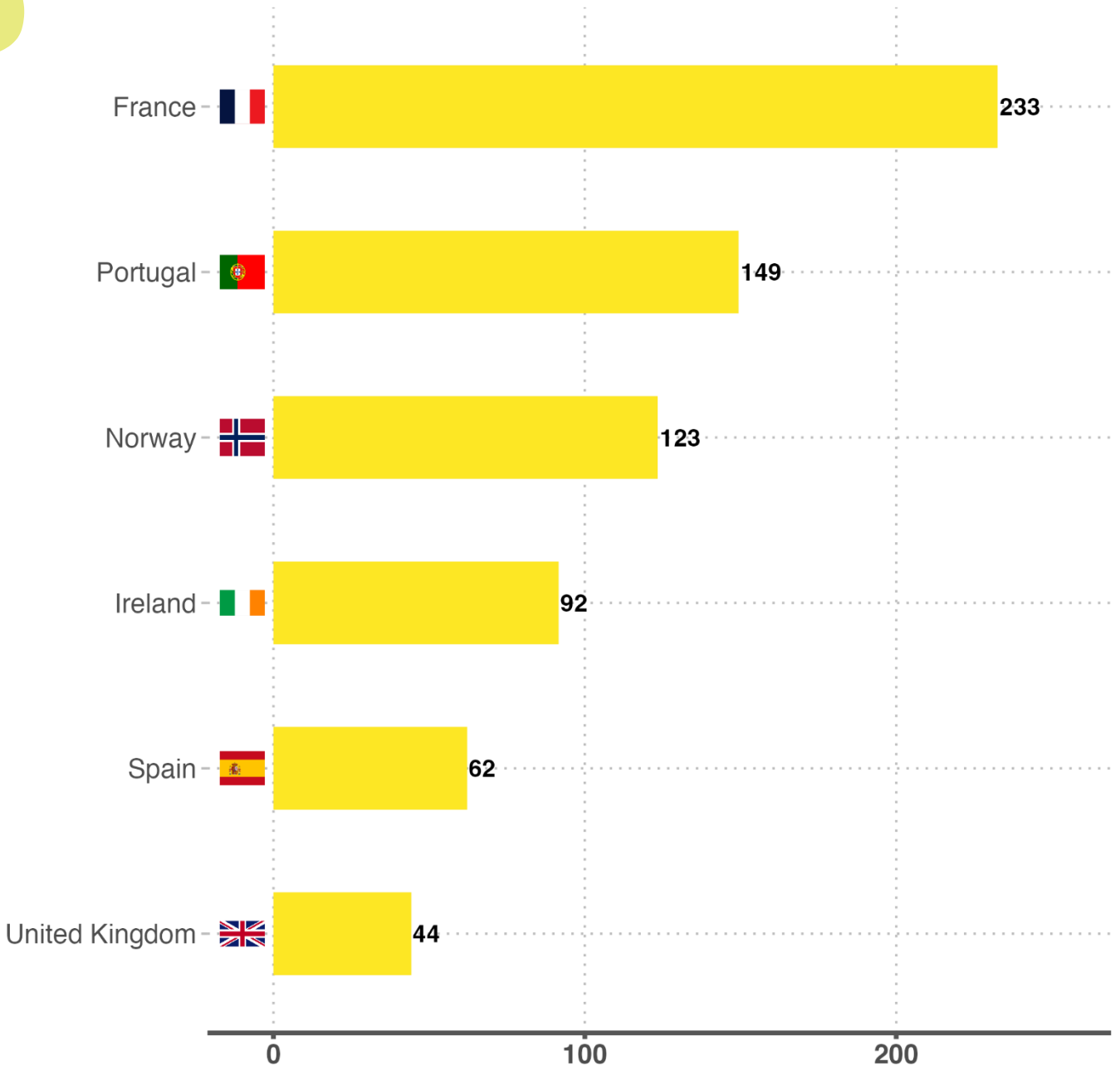
The average counting site in France experiences more bicycle activity than in other countries, with an average of 233 bike passes per day in 2022. Portugal, on average, had the 2nd highest activity with 149 bike passes per day on average.

Some segments of the Atlantic Coast Route (when broken into 100km lengths) had daily bike passes between 600 and 900 on average throughout 2022. **The departments with the greatest bicycle use include: Vendée, Gironde and the Pyrénées-Atlantiques.**

Most departments on the Atlantic Coast Route in France have a similar monthly profile with peak bike activity in July and August; however, Loire has a broader profile with peak activity extending from May until September.

The data from **2022 highlights France's high level of seasonality, as well as Portugal and Spain's stability in bike counts throughout the year.**

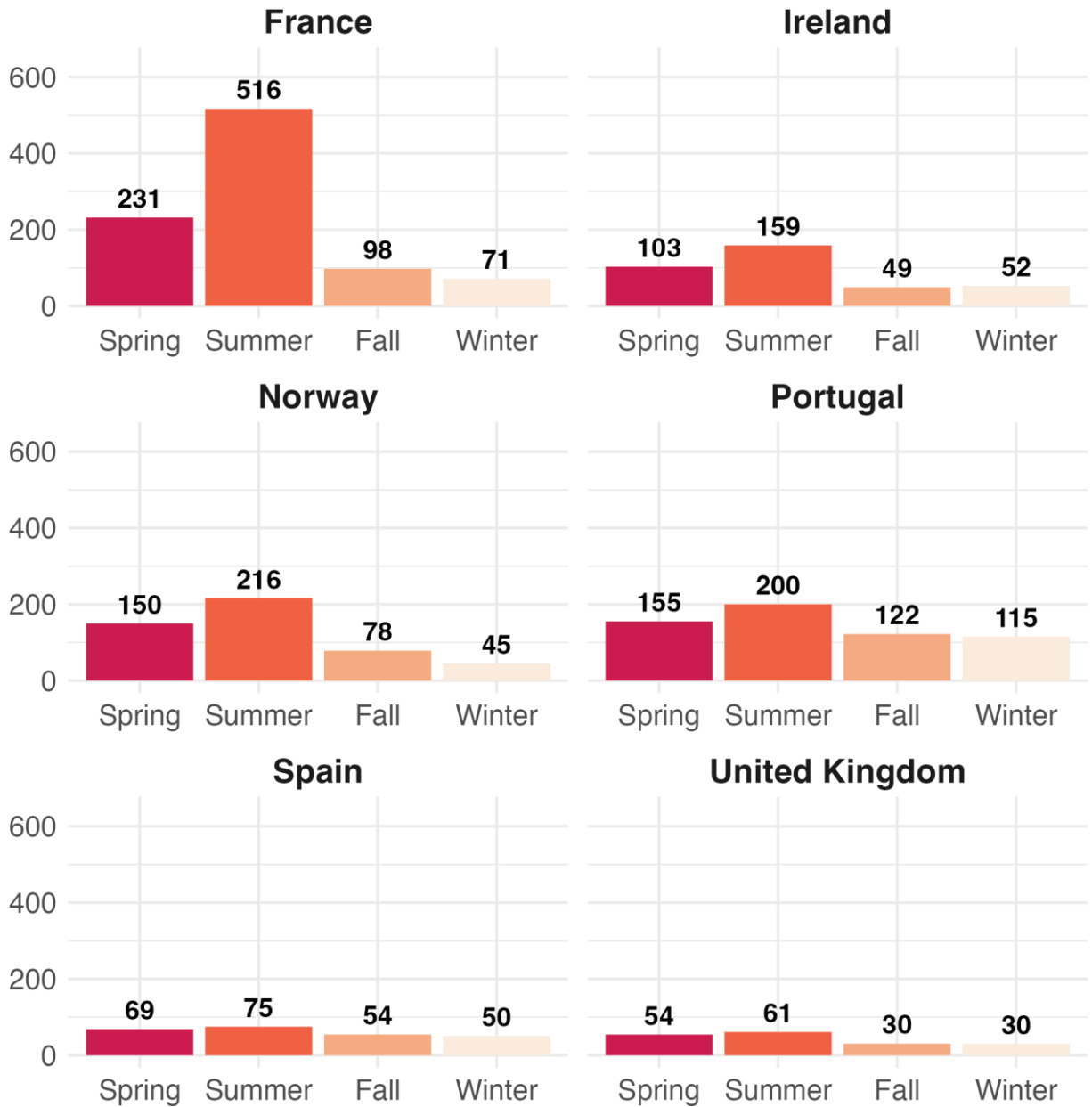
Daily average in 2022



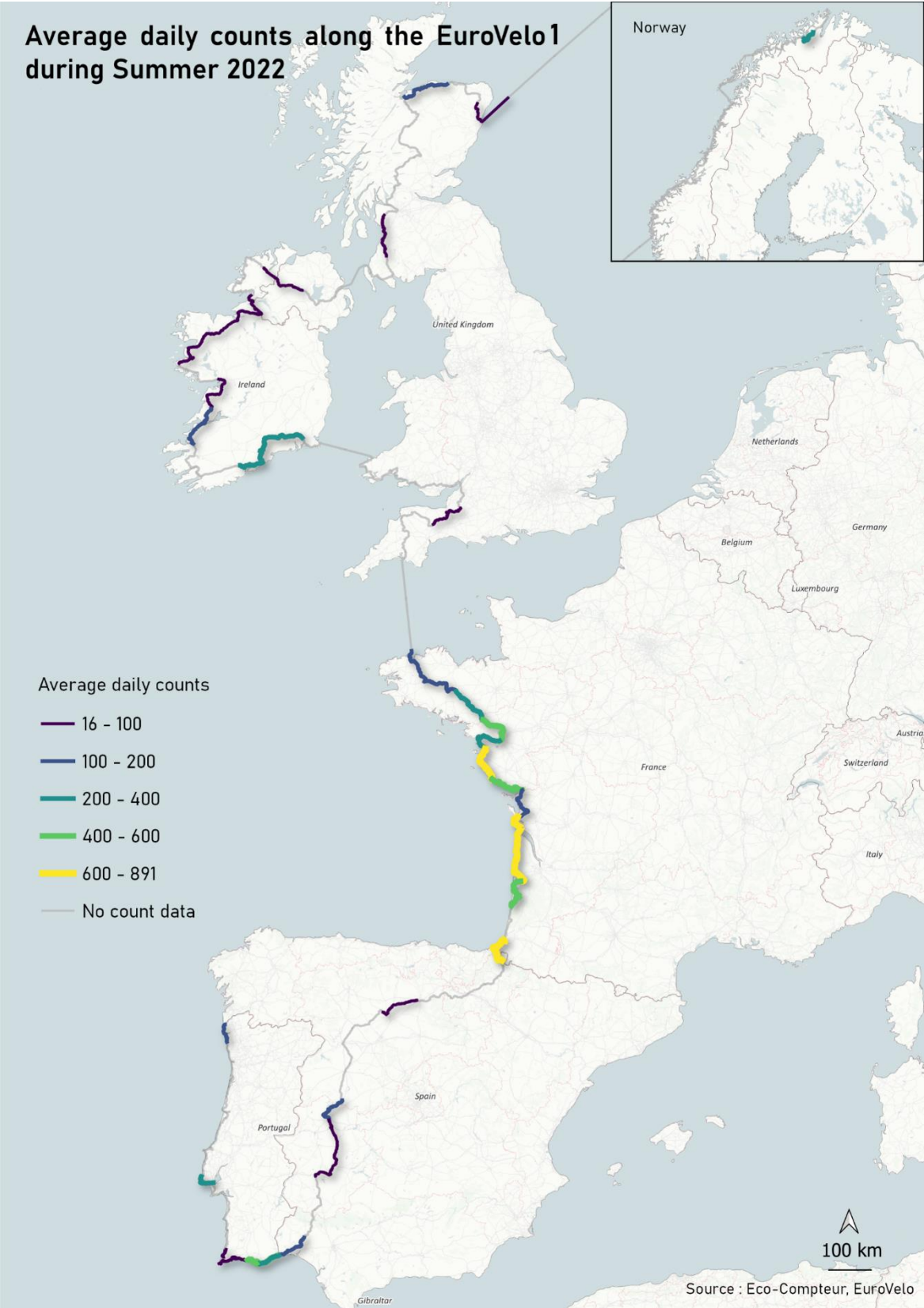
Seasonal comparison in 2022

In daily bike counts per counter

Spring Summer Fall Winter



Average daily counts along the EuroVelo 1 during Summer 2022

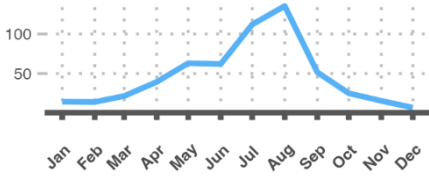


France

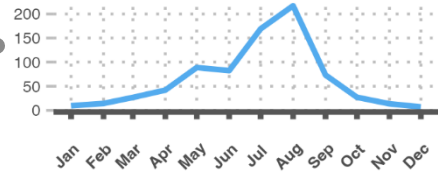
By department



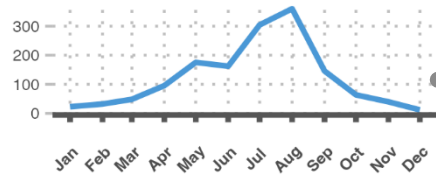
Finistère (29)



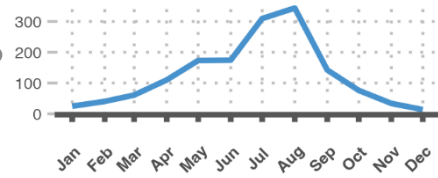
Côtes-d'Armor (22)



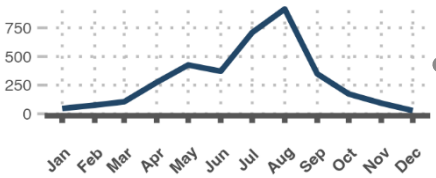
Morbihan (56)



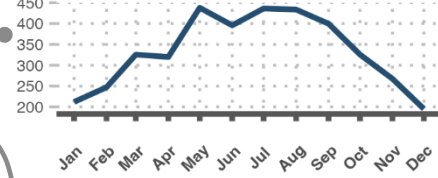
Ille-et-Vilaine (35)



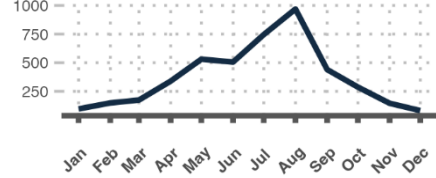
Vendée (85)



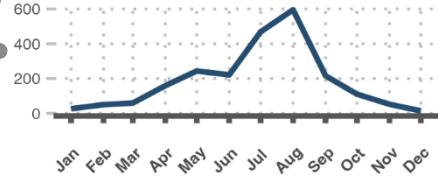
Loire-Atlantique (44)



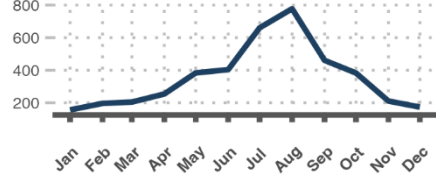
Gironde (33)



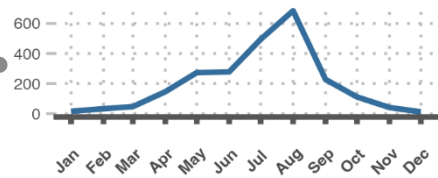
Charente-Maritime (17)



Pyrénées-Atlantiques (64)



Landes (40)



Average daily counts in 2022



100 200 300

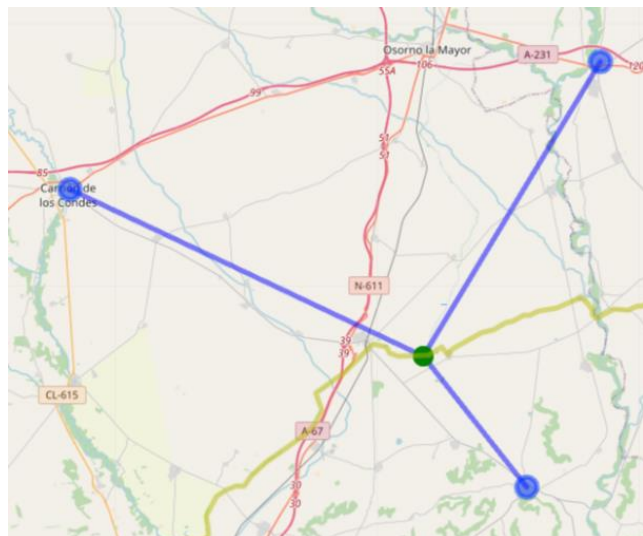
Methodology For Site Classification

In order to separate urban and rural (leisure) bike counting sites, a methodology was applied that consisted of the following steps:

- Identification of closest cities: The three closest cities with a population over 1000 inhabitants were identified.
- A gravity model was applied to calculate the influence of each city on the bike counting sites. This was done by summing each city's population divided by the square of the distances between the city and the counting site.
- A counting site was considered rural if the value of the gravity model was below 15,000. This corresponds to a counting points being located at least 1km away from the boundary of a town of 15,000 or at least 2km away from a city of 60,000.

This methodology effectively separates urban and rural (leisure) bike counting sites, taking into account the influence of the closest cities on each site and considering the population and distances involved.

The map on the right shows an example of the methodology in action, where the green dot represents the bike counting site and the three blue markers represent the closest cities. In this example, the counting site was classified as a rural site with leisure bicycle activity.





Rural vs Urban

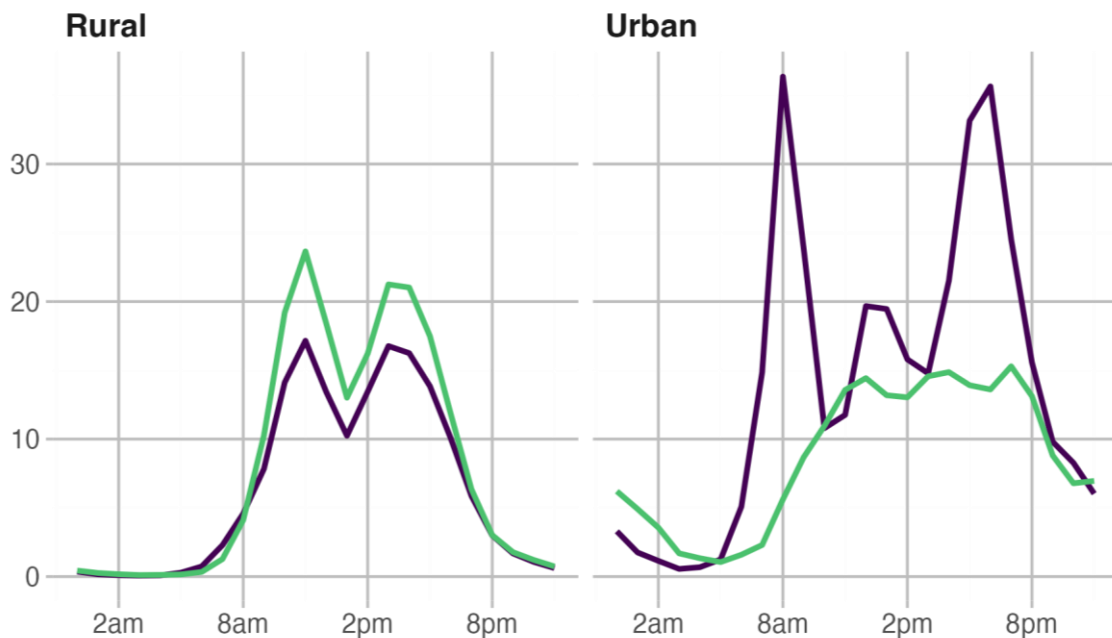
A comparison of counting data at urban and rural sites provides insight into how these sites are used differently. The graphs below illustrate bicycle counts at the hourly time resolution on weekdays and on weekends.

Rural sites, on average, have greater activity on weekends than on weekdays. Peak activity occurs during the late morning and in the early afternoon. This hourly pattern is associated with leisure or recreational cycling.

Urban sites, on average, have greater activity on weekdays, specifically during peak commuting times: at 8AM and at 5PM. This hourly pattern is associated with utilitarian or commuting activity.

Hourly counts comparison

— weekday — weekend



Number of Sites per Country

Country	Longitudinal study	Spatial study
Spain	2	6
France	56	63
UK	23	26
Ireland	14	31
Portugal	5	14
Norway	1	1

Number of Sites per French Department

Department	Spatial
Charente-Maritime	12
Côtes-d'Armor	2
Finistère	2
Gironde	9
Ille-et-Vilaine	1
Landes	4
Loire-Atlantique	15
Morbihan	4
Pyrénées-Atlantiques	4
Vendée	8



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