

# Fieldwork under lockdown: Investigating the impacts of Covid-19 on the environment

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# Investigating how and why traffic flows change over time

We all know that there is usually a lot of traffic on the roads in the UK. During lockdown, the amount of car journeys has decreased dramatically. This fieldwork investigation is simple, although it will take a few weeks to complete – you are going to investigate how long it takes for traffic to get back to normal as the Covid-19 lockdown is slowly released.

To be safe – you do not need to leave your home to do this fieldwork investigation. If you can see a road (and the sky) then you can do it from your window, balcony or garden.



# Some research before you begin

So how busy are roads in the UK normally? Here are a couple of interesting graphs.

Powys is a very rural part of Wales. Birmingham is the UK's second biggest city.

## Activities

1. Describe the trend for cars and taxis on each graph.
2. Can you suggest why the trends are different? Think about how else people get about in big cities and why this would be more difficult in the countryside.
3. Use the [Department for Transport](https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints) website to find similar graphs for where you live.

<https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints>

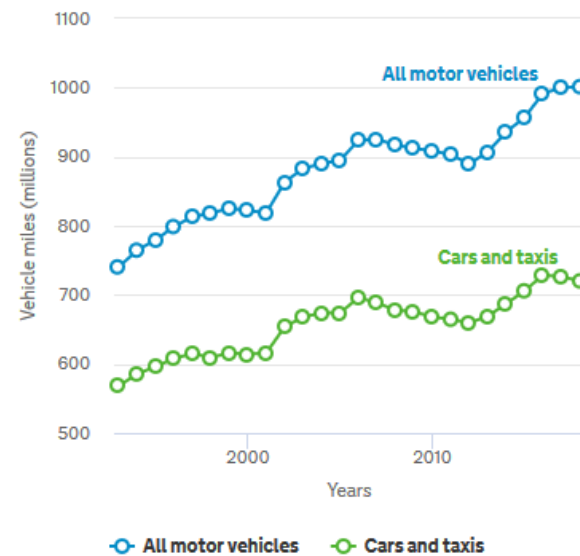
## Local authority Powys

[Powys local authority profile](#) →

**1.0 billion vehicle miles**  
were travelled in 2018

### Annual traffic by vehicle type in Powys

Traffic in Great Britain from 1993 to 2018 by vehicle type in vehicle miles (millions)



Highcharts.com

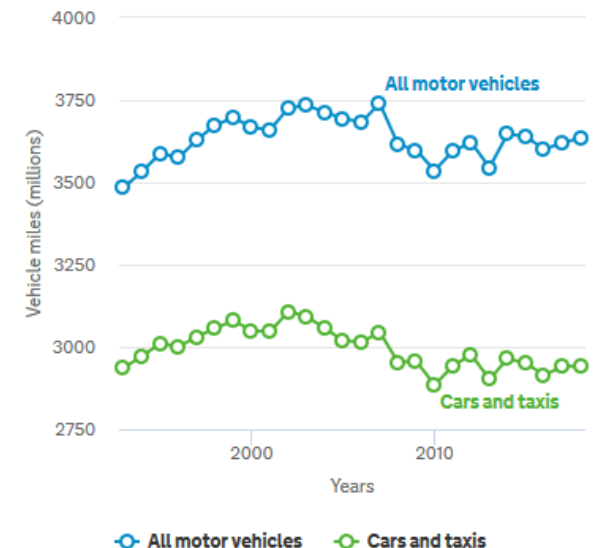
## Local authority Birmingham

[Birmingham local authority profile](#) →

**3.6 billion vehicle miles**  
were travelled in 2018

### Annual traffic by vehicle type in Birmingham

Traffic in Great Britain from 1993 to 2018 by vehicle type in vehicle miles (millions)



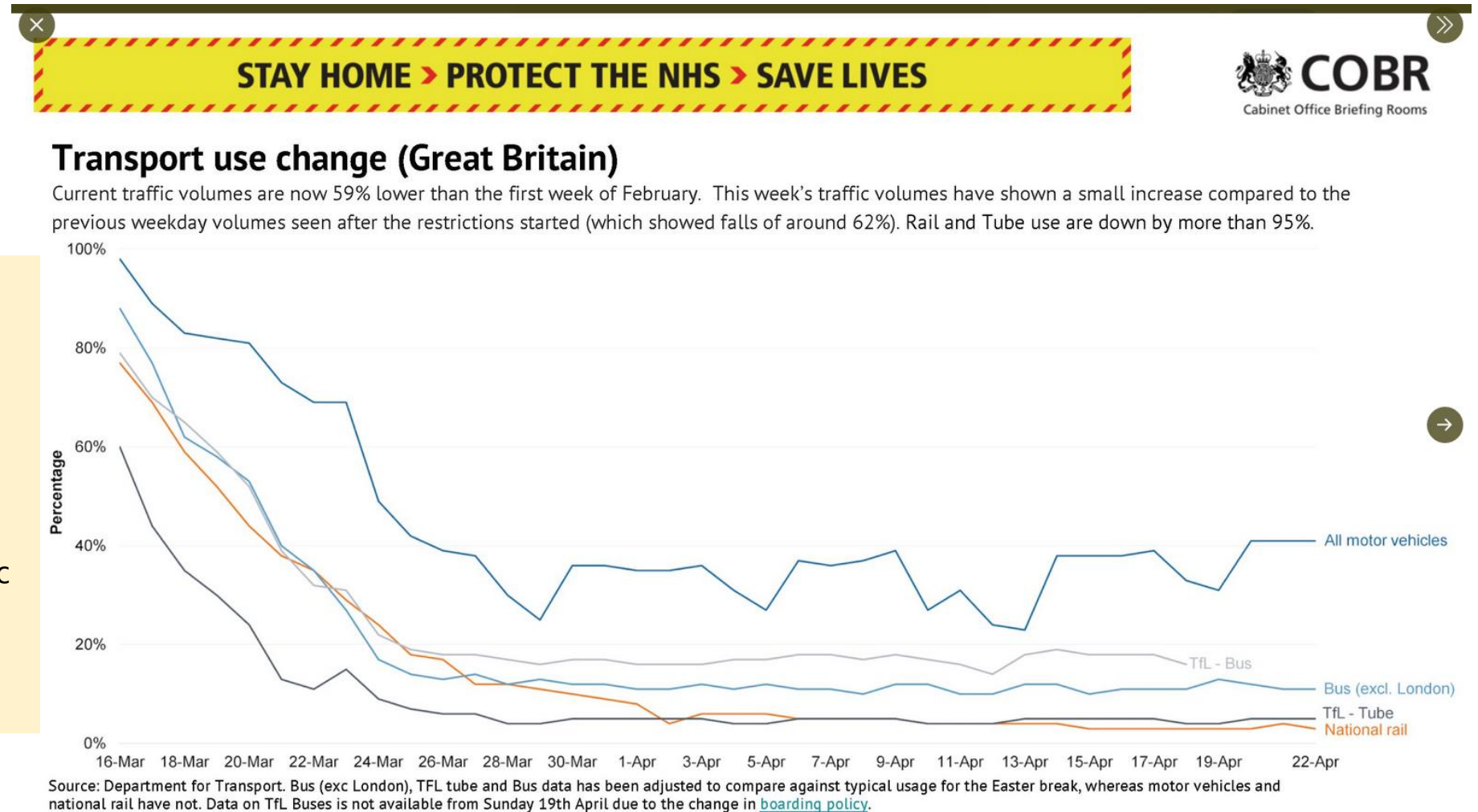
Highcharts.com

# How has the lockdown affected traffic flows?

Here is some secondary data that will help the investigation. It is from the UK government website.

## Activities

1. Describe the trend for all motor vehicles.
2. Think about how your movements, and those of your family, have changed during lockdown.
3. Explain why flows of traffic have reduced during the Covid-19 lockdown.

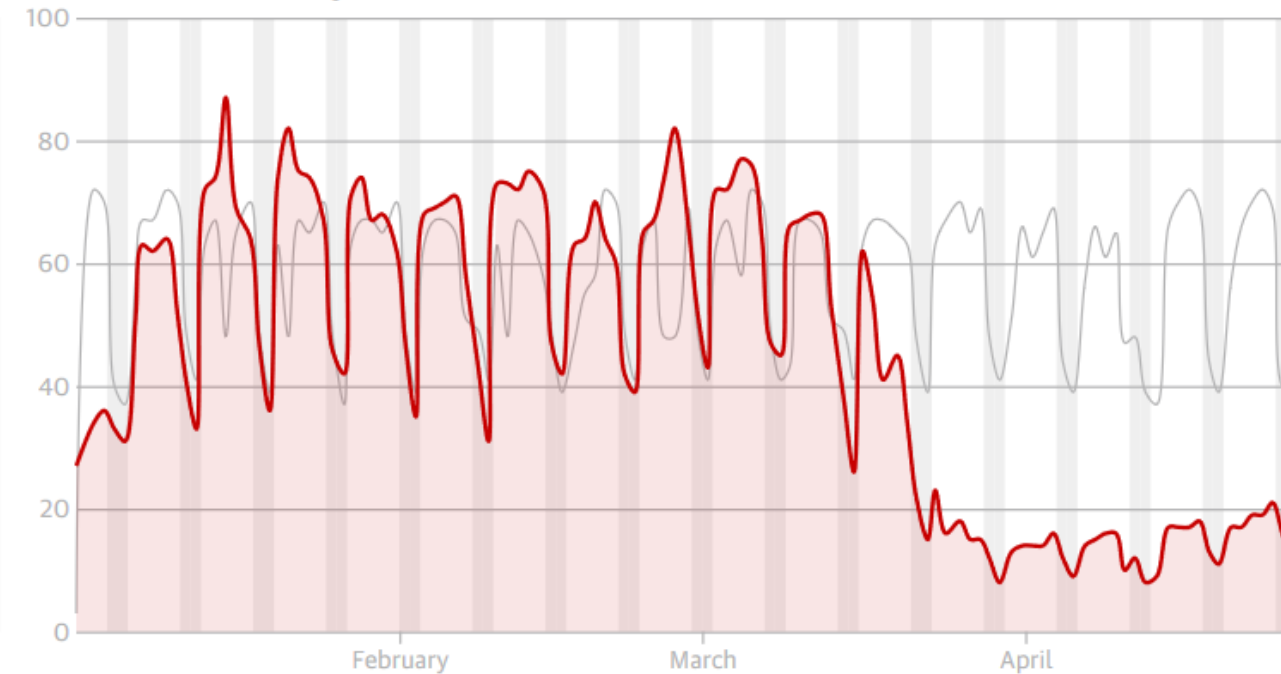




# A bit more research

## London

Slowdown later and more gradual than Paris



[https://www.theguardian.com/world/ng-interactive/2020/apr/27/the-traffic-data-that-shows-the-road-into-and-out-of-covid-19-lockdown?CMP=Share AndroidApp Gmail](https://www.theguardian.com/world/ng-interactive/2020/apr/27/the-traffic-data-that-shows-the-road-into-and-out-of-covid-19-lockdown?CMP=Share_AndroidApp_Gmail)

Have other parts of the world also had less traffic on their roads? Use the [Guardian](#) website to see how traffic flows have changed in several cities across the globe.

### Activities

1. Describe the trend of the red line on this graph which shows the amount of traffic on London's roads.
2. Suggest why the red line has four peaks and four troughs during January and February. What do these repeated cycles tell us about flows of traffic during 'normal' times.

# Investigating the impact on air traffic

It's not just road traffic that is affected by the coronavirus. Air traffic has been affected too. These maps show flights taken by aircraft in March 2019 (left) and March 2020 (right).

One week of air traffic in **2019**  
*week commencing 18 Mar*



One week of air traffic in **2020**  
*week commencing 23 Mar*

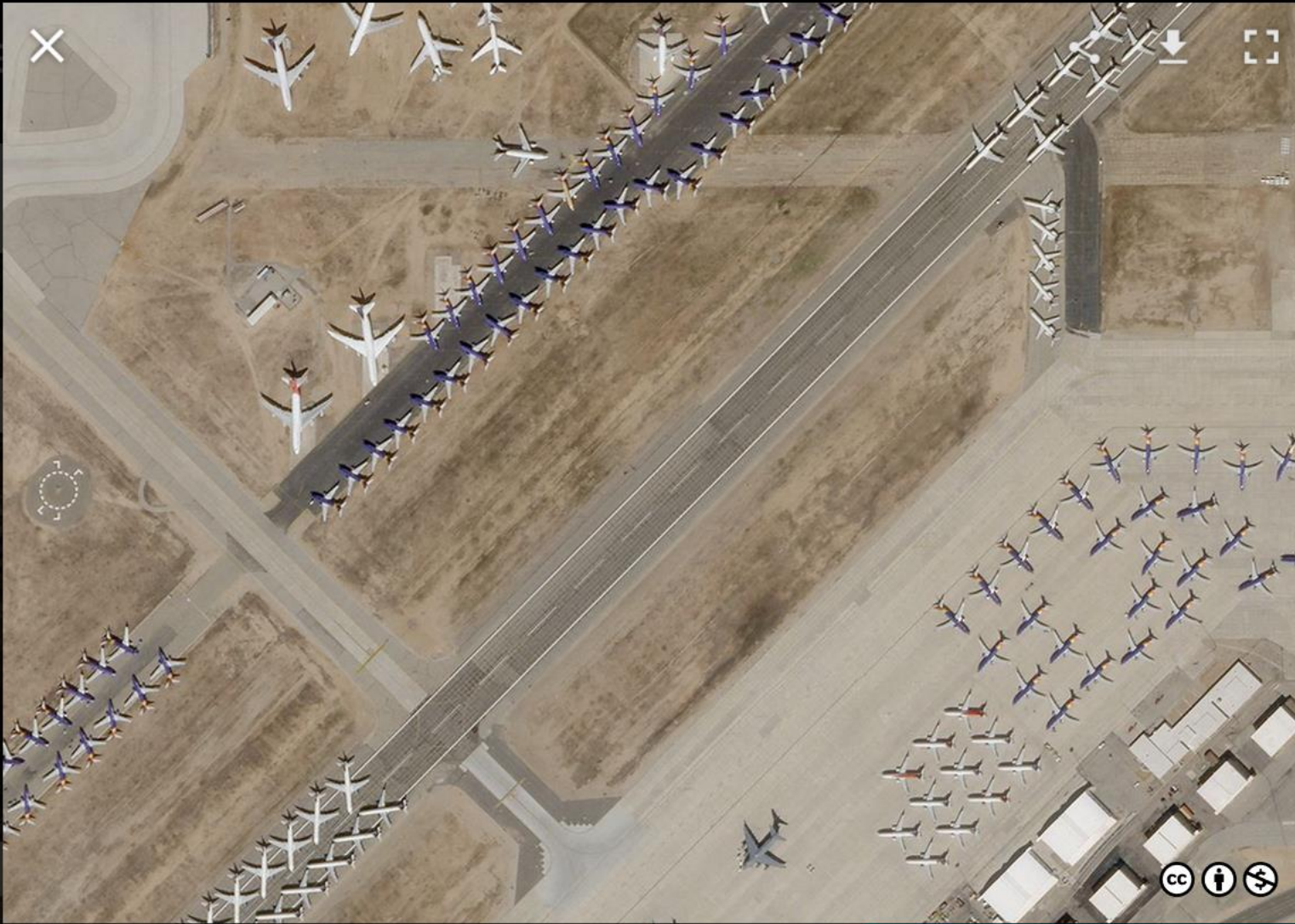


<https://www.theguardian.com/world/ng-interactive/2020/apr/03/how-is-the-coronavirus-affecting-global-air-traffic>

This satellite image, taken 29 March 2020, shows unused aircraft in storage. Source: <https://www.planet.com>



<https://www.planet.com/gallery/#!/post/southern-california-logistics-airport>



## SOUTHERN CALIFORNIA LOGISTICS AIRPORT

United States

Apr 5, 2020

Source: Skysat

Coronavirus: As air travel drops, demand for plane storage jumps at Southern California Logistics Airport



Are you an imagery or GIS specialist?

[Explore our imagery](#)

Apr 5, 2020

Apr 3, 2020

Mar 29, 2020

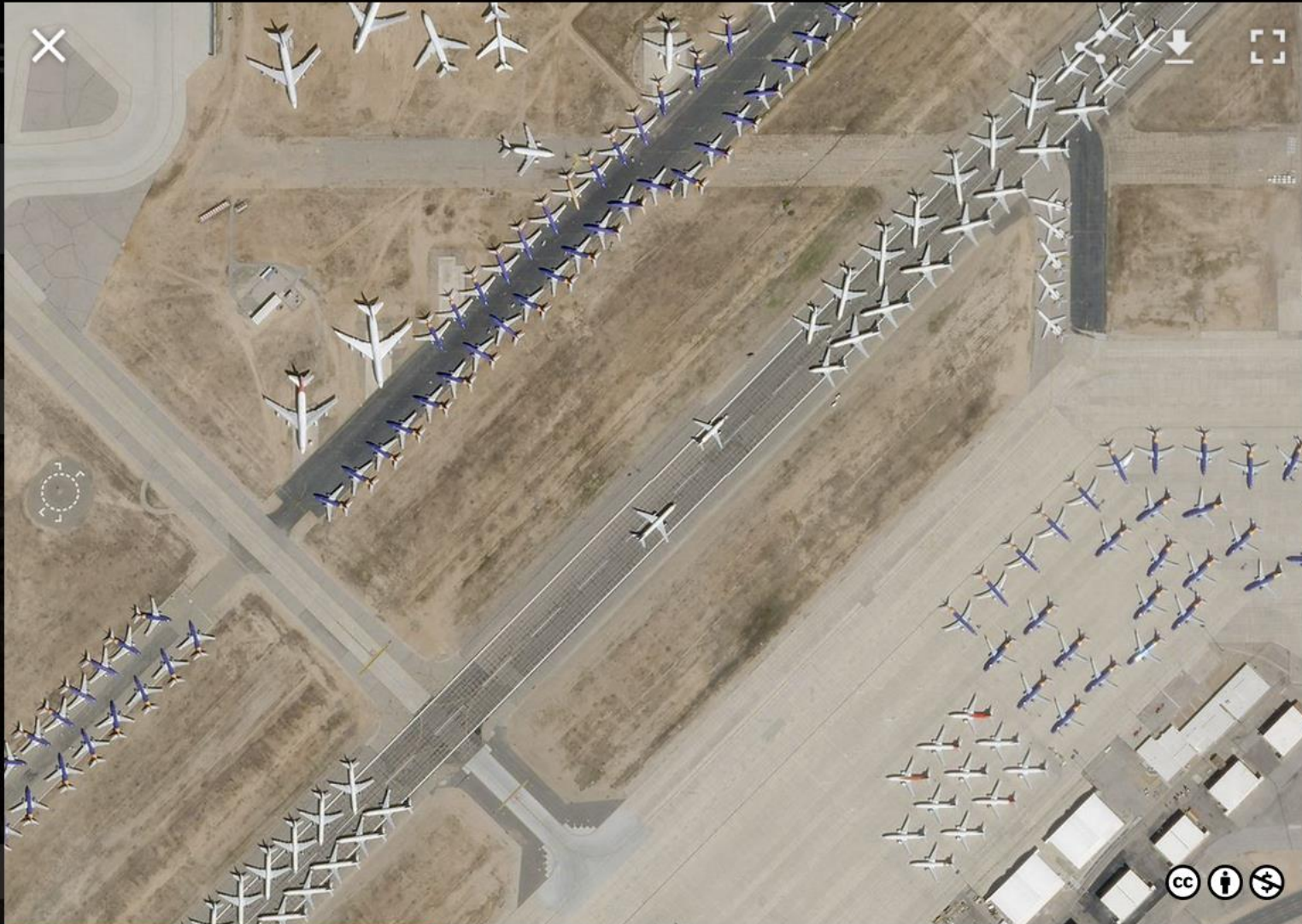


This image, taken 5 April 2020, shows the same location.

<https://www.planet.com/gallery/#!/post/southern-california-logistics-airport>



Source <https://www.planet.com>



## SOUTHERN CALIFORNIA LOGISTICS AIRPORT

United States Apr 5, 2020

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Are you an imagery or GIS specialist?

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### Activities

1. What has changed?
2. Why do you think this is?

Apr 5, 2020

Apr 3, 2020

Mar 29, 2020



# Evaluating secondary data

So far, all the evidence we have examined is from secondary sources. A key element of any fieldwork investigation is evaluation – reflecting on the strengths and limitations of the investigation.

Good evaluation is:

- **Balanced.** This means that you consider some strengths and some weaknesses. However, you do not need an equal number of each.
- **Specific.** This means that the evaluation is relevant to the actual fieldwork investigation that you are conducting. It is best to show this in an example. Only example 3 is specific to the fieldwork we are doing. The others are weak because they are too general.

Example 1. “One strength of a secondary source is that it can give us data that was collected before we did our own fieldwork. This meant that we could see how things changed over time.”

Example 2. “One limitation of secondary sources of data is that they can be old so the information is out of date.”

Example 3. “One strength of the Planet.com satellite images is they were taken during the lockdown so I can see how the number of unused aircraft has increased over just one week.”

## Activities

1. Evaluate the secondary sources we have used so far.  
Remember to:
  1. Find some strengths
  2. Find some limitations
  3. Be specific. How useful is this evidence in our investigation of how and why traffic has changed during the lockdown?

# Observing contrails in the sky



Have you seen any contrails during the lockdown? These are the vapour trails left by jet engines.

What about investigating this research question: How quickly do contrails reappear in the sky as the government lifts restrictions on travel?

To answer this research question you will need to use a data collection sheet and note down the number of contrails you can see in the sky each time you record traffic flows. You won't see any if it is cloudy of course – so the weather is a factor that you will need to jot down each time you collect data.



# The fieldwork investigation

## **Aim**

To investigate how traffic flows change during May and June 2020.

## **Research questions**

1. Do flows of traffic follow similar patterns each day/week?
2. How do flows of road and air traffic change as the lockdown is released?
3. How do flows of traffic affect the environment?

## **Data collection and sampling**

I want you to record the amount of traffic you can see from your window, balcony or garden. You will need to:

- a. Decide how often you do this (sampling)
- b. Design a data collection sheet to record the figures.

## **a. Sampling**

You need to make a decision about how often you observe the traffic. I suggest you observe traffic in 5 minute periods. You could do this:

- Once a day at the same time each day
- Once a day at different times each day. You could throw a dice (or use an online random number generator) to choose a random time to do it
- Three times a day, at regular intervals e.g. at 8.30am, 12.30pm and 4.30pm

Each of these sampling ideas has strengths and weaknesses. Make a list of the strengths and weaknesses of each idea before choosing one – then stick to it.

# Designing a data collection sheet

## b. Data collection sheets

You will need to design a data collection sheet. There are instructions below and an example opposite. However, if you don't like it, you can design your own.

- Step one** Decide what you are going to record. All traffic? Just aircraft? Just cars? Or maybe you could have a sheet for buses, lorries, vans, cars and cyclists?
- Step two** Include the time and date so that you know when you made the observations.
- Step three** Leave a space on the sheet so you can make a note of any factors that might be affecting traffic flows. For example, if the government announces that certain groups of people can go back to work, or students can go back to school, this would probably have an affect on the amount of traffic you observe. Also, note down whether the sky is cloudy, as this will affect the number of contrails you can see.

		Number of vehicles seen in 5 minutes						Contrails	Comments
Date	Time	Cars	Lorries	Vans	Buses	Motorcycles	Bicycles		



# Extending the investigation

Less traffic means that it has been quieter during lockdown. People say that they have noticed other sounds, such as bird song, during lockdown.

We can investigate sounds using fieldwork – the next page explains how to investigate a soundscape.



## Coronavirus: Streets silent as people stay at home

These are the empty streets in Lincolnshire and East Yorkshire, as social distancing continues and people stay at home.

Roads in Lincoln and Boston, which would have usually been bustling with people, were near silent.

Queens Gardens in Hull also remained free from crowds as police stepped up patrols in the area.

Read more: [How staying at home can stop coronavirus](#)

Read more: [Coronavirus information: What should I do?](#)

🕒 25 Mar 2020

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## Activity

1. Follow this link to watch the short BBC video about how lockdown has affected the environment.
2. What are the main differences that people have noticed during the lockdown?

<https://www.bbc.co.uk/news/av/uk-england-lincolnshire-52041142/coronavirus-streets-silent-as-people-stay-at-home>

# Investigating soundscapes

- **Step One** Decide how often you are going to listen. For example, once a day (at the same time each day), once a day (at different times each day) or three times a day at regular intervals.
- **Step Two** Create a data recording sheet. You could use the one below, or make something similar.
- **Step Three** When it is time to collect the data, open the window or go into the garden. Close your eyes for one minute and listen carefully.
- **Step Four** Open your eyes and fill in the data recording sheet.

Date ..... Time .....

1. What are the main sounds you can hear? Tick up to **three** boxes

- |                               |                          |                        |                          |
|-------------------------------|--------------------------|------------------------|--------------------------|
| Vehicles (cars/lorries/buses) | <input type="checkbox"/> | Construction work      | <input type="checkbox"/> |
| Birds/bird song               | <input type="checkbox"/> | Music                  | <input type="checkbox"/> |
| Trains/trams                  | <input type="checkbox"/> | Wind/trees blowing     | <input type="checkbox"/> |
| Aeroplanes overhead           | <input type="checkbox"/> | Rainfall/water running | <input type="checkbox"/> |
| People talking/shouting       | <input type="checkbox"/> | Dogs barking           | <input type="checkbox"/> |

2. Of these sounds, which one is loudest? .....