

# Royal Holloway

## Geography for Schools

### Lecture Series

**Pyrogeography** (from Greek “Pyr”: Fire) is a geographical field focusing on the past, present, and future distribution of wildfire on Earth. Wildfires are a global phenomenon interesting nearly all biomes on Earth; their occurrence, frequencies and intensities vary across space and time, with a great annual and latitudinal variability that mostly depends on three factors: vegetation, climate and people.

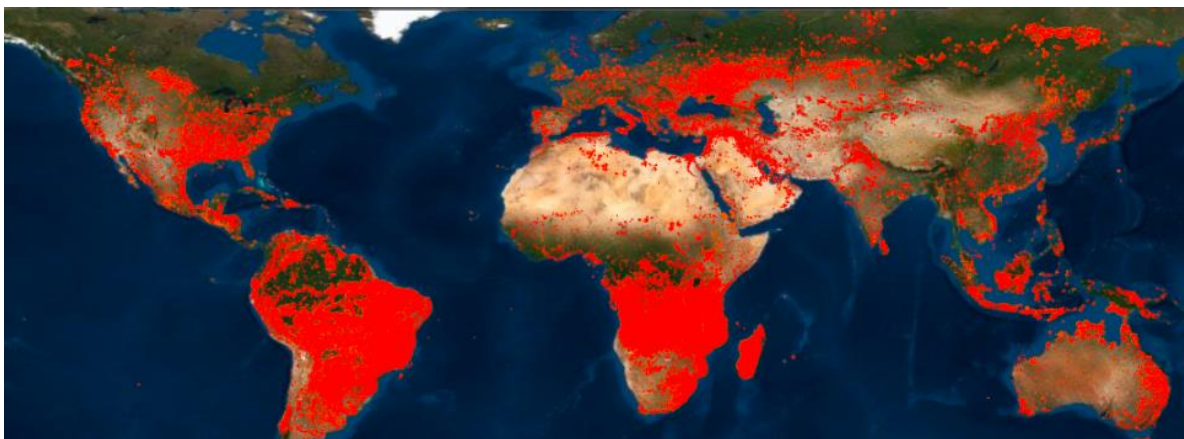
In this exercise, you will use the *Fire Information for Resource Management System (FIRMS)*, an online tool available from NASA to interactively browse the full archive of global active fire detections from satellites, with near real-time fire data. This will allow you gaining a deeper understanding of the spatial and temporal variability of fire on Earth, and to potentially assess future trends considering fire in a future Warmer World.

#### Learning outcomes:

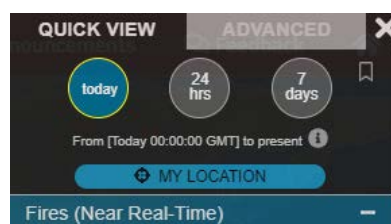
- 1) Learn how to produce a wildfires map at regional, continental and global scales.
- 2) Explore the temporal variability of fire over decades.
- 3) Assess the impact of wildfires on the most sensitive regions of the Earth.

#### Steps:

- 1) Open the “NASA FIRMS” <https://firms.modaps.eosdis.nasa.gov/map>. You can now zoom on the map and check the location of fires for each region/continent during the last 24 hours.



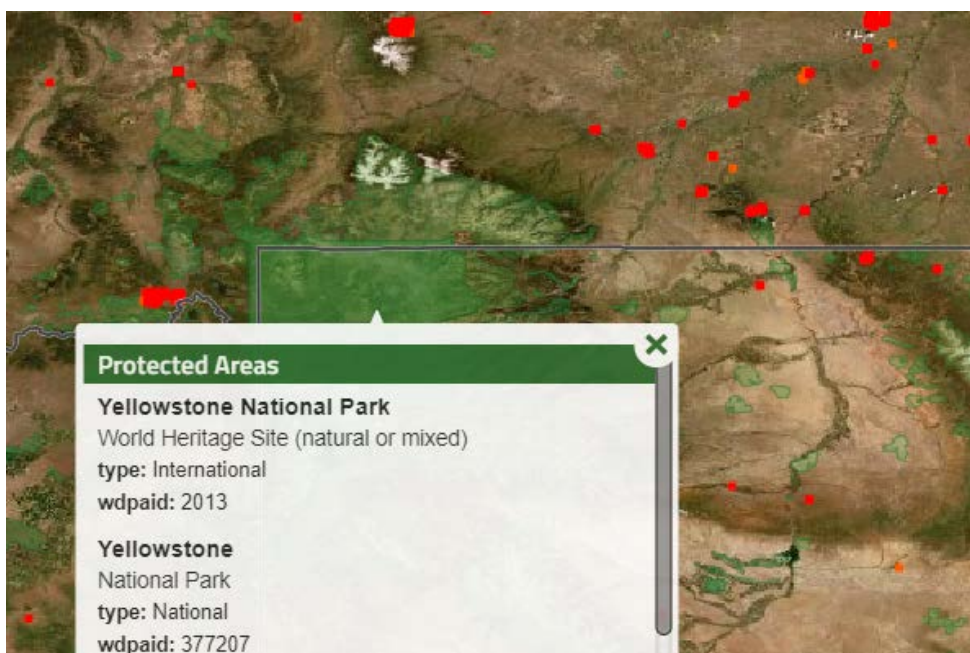
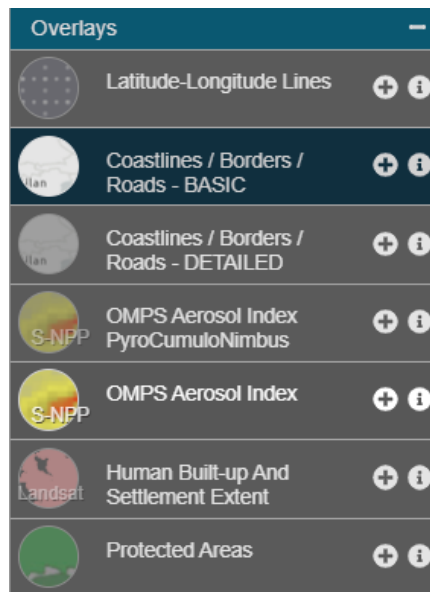
- 2) Use the left menu (see below) to fully include the last 7 days (and beyond). You will see an increase of points on the map in many regions.



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3) Now you can add more layers to your map. You can use, for example, the “Protected areas” layer provided by the World Database on Protected Areas (WDPA). This is the most comprehensive global database of marine and terrestrial protected areas and one of the key global biodiversity datasets used by scientists, governments, stakeholders to inform planning, policy decisions and management). You can focus on specific countries and compare the Wildfire and Protected areas layers (see example for Yellowstone National Park).



Questions:

1) Are there any regions that burn more than others? What if you compare temperate and tropical regions, for example?

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- 3) What is the relationship between seasonality and fire? When is the season more “conducive for fires” in each hemisphere?
- 4) Is there a relationship between fire, population density or a particular economic activity (think about deforestation and agriculture, for example)?
- 5) Are there any protected areas or National Parks currently under risk? Discuss the implication of severe wildfires for biodiversity losses.

Additional information on NASA’s satellite instruments here:

[https://www.nasa.gov/mission\\_pages/fires/main/missions/index.html](https://www.nasa.gov/mission_pages/fires/main/missions/index.html)

Other more advanced activities for Pyrogeographers: <https://firms.modaps.eosdis.nasa.gov/tutorials/>

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