Located in Norway, the Svalbard Archipelago is home to unique arctic wildlife. Unfortunately, this area does not escape from the devastating impact of global warming. Recently, polar caps, sea ice and permafrost have been melting and the habitat of vulnerable species including the polar bear have been threatened. Given the worldwide concern, how can satellite imagery help us evidence this impact of global warming on the habitat of the polar bears residing in the Norwegian Svalbard Archipelago during the last 14 years (2001-2015)?

The Svalbard Archipelago is a cold and arctic desert, it’s almost 60% glacier-covered, and 10%, at most, is covered with vegetation [5]. As the Earth’s temperatures have risen by approximately 0.6° over the last 50 years [6], the territory has experienced a significant decrease on the percentage of firm ice caps. Ergo, much of Svalbard’s flora and fauna has been affected, particularly the polar bear. Although firm ice caps in the area provide more and better resources for the polar bear to hunt its preferred prey, the ringed seal, the significant regression of these ice caps has forced the species into adverse conditions, resulting in the decline of the polar bear population.

Given the detrimental repercussions on the polar bear population, several studies have been done regarding climate change in the region —most of these executed by the Norwegian Polar Institute. The innovative component of this investigation, however, is the use of satellite imagery to complement the analysis, which allows for a better understanding of how global warming is really affecting the polar bear and further reaffirms the importance of preserving this vulnerable keystone species.

The imminent impact climate change is having on the vulnerable Arctic ecosystem, and the species that depend on it, is clearer than ever. It is in our hands to minimize the effects of global warming, and avoid critical damage on vulnerable species, such as polar bears, which inhabit the ecosystem. However, the question remains: is the impact caused by global warming on the Arctic reversible, or do we have to focus our efforts on the preservation of what is left, rather than restoring what has already been lost?

REFERENCES