# Article information:

Advances in phenology are conserved across scale in present and future climates | Nature Climate Change  
<http://www-nature-com-s.vpn.imu.edu.cn:8118/articles/s41558-019-0454-4>

# Article summary:

1. Warming temperatures are advancing the timing of seasonal vegetation development in the extratropics, altering plant–animal interactions and increasing the risk of trophic asynchrony.

2. A framework has been developed that uses growing degree days (GDDs) to observe forest understory phenology in near-real time.

3. This framework can also be used to predict the phenological response of understory plants under future climate scenarios, enabling researchers to assess the regional-scale impacts of climate change on bottom-up forest ecosystems.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Advances in Phenology are Conserved Across Scale in Present and Future Climates” is a well-researched and comprehensive piece that provides an overview of how climate change is impacting vegetation phenology and how this can be monitored using a thermal observation framework. The authors provide evidence for their claims through field observations, growth chamber experiments, and satellite imagery, which makes their arguments more reliable and trustworthy.

However, there are some potential biases present in the article that should be noted. For example, the authors focus mainly on one species (Shepherdia canadensis) when discussing their findings, which may lead to generalizations about other species that may not hold true. Additionally, while they do discuss potential risks associated with climate change such as trophic mismatches, they do not explore any possible solutions or mitigation strategies for these risks.

Furthermore, while the authors provide evidence for their claims from both field observations and satellite imagery, they do not discuss any potential limitations or drawbacks associated with using satellite imagery to monitor phenological changes. Additionally, while they mention that cloud cover often creates gaps in observation records due to its opacity blocking out microclimates within forests from view of satellites, they do not explore any alternative methods for monitoring these microclimates or mitigating data loss due to cloud cover.

In conclusion, this article is generally reliable and trustworthy due to its comprehensive research and evidence provided by field observations and satellite imagery; however there are some potential biases present that should be noted when considering its trustworthiness such as its focus on one species only and lack of discussion regarding possible solutions or alternative methods for mitigating data loss due to cloud cover.

# Topics for further research:

* Mitigation strategies for climate change
* Alternative methods for monitoring microclimates
* Limitations of satellite imagery for phenology
* Trophic mismatches due to climate change
* Impacts of climate change on vegetation
* Solutions for data loss due to cloud cover

# Report location:

<https://www.fullpicture.app/item/1b2d1278a7d46881a823a83a16368112>