# Introduction

*The four seasons come and go, and all creatures thrive and grow.*

The mod Four Seasons adds a Season system with Summer, Autumn, Winter, and Spring to the game.

Positive or negative Effects are applied to all Units and Cities on the map depending on the current Season and its randomized Severity. The AI, City-States and Barbarians are naturally affected too.

In addition, the animated time of day changes with the Seasons. This makes the map look dark and cold in Winter and bright and warm in Summer.

My goal with this mod was to make planning of Wars and Food management more important.

## Inspiration

The biggest inspiration for Four Seasons came from Northgard, a Viking themed real time strategy game with a Season system.

The first time I played Northgard, my Clan was thriving and ever expanding while my advisors kept saying that Winter is imminent, suggesting I take precautions. I did not really bother since everything was looking fantastic for me. Lots of land, and buildings, and yields. I was well prepared, or so I thought.

Then the map transitioned from green and lively to white and deadly silent. That Winter was a particular cold one. The population needed wood to heat its houses and tons of food too. But food could not be grown because of the low temperatures. Wood could not be cut because all my tree fellers were sick with rat plague which spread due to the food shortage.

When it started warming up towards the end of Winter, only one in four of my citizens survived. Had I only listened to my advisors and hoarded more resources.

Going through this in Northgard and coming back to Civilization VI, I asked myself: why is this kind of Season system not here? The variety it provides to the gameplay is immense, forcing you to change up your playstyle every now and then. At least an option to have it in the game would be cool. A scenario or a DLC, but nothing. Then, I was sure that someone modded that in. But again, nothing.

Am I the only one who wants a Season system in this game, I thought? After all, the four Seasons play a huge role in everyday life and history. It seemed obvious to me that Civilization, being at the forefront of 4X, would be enriched with a Season system. With this in mind and the fact that I had some lackluster coding skills, I took the decision to create my own mod: the Four Seasons.

## Credits

In the darkest moments of developing this mod, these people here have helped me on many times and made Four Seasons possible. A big thank you to…

* Sukritact for his Civilization VI: Modding Knowledge Base.
* ChimpanG for his Civ VI Modding Companion.
* Gedemon for his many useful comments on the CivFanatics forums.
* DB for providing a detailed overview of all Font Icons and Colors in Civ VI.
* bane\_ for his Basic Modding Guide for Civ5 and good Civ related coding convention tips.
* LeeS for his Civilization 6 Modding Guide and useful comments on CivFanatics.

# Mechanics

The Seasons are a very complex topic. Changes in weather, ecology and daylight occur. But the changes are not always similar, and they do not always happen at the same time of year. Humans, animals, and plants alike are bound to adjust to each Season if they want to survive. And with this, whole Civilizations too.

A few different Mechanics in Four Seasons make sure that the Seasons are accurately represented:

## Effects

The Seasons have a huge impact on our everyday lives. Our food, clothes, and leisure. Four Seasons tries to bring this into the Civilization VI Gameplay with its Effects. These are applied globally to all Units and Cities, depending on the current Season and its randomized Severity. But not every Effect is changed in a Season, no changes to the game is also possible. The Effects that are applied during the Seasons include:

* Experience: The worse the Healing and Movement penalties, the higher the additional Unit Experience. Basically, having fought in tough conditions strengthens your Units. This adds a reward for risking your Units when they have penalties.
* Healing: Low temperatures, less food, no shelter, or the opposite. All this can have impact on the Healing of your Units. In later Eras, having enough Medics or Supply Convoys is essential if you want to keep your Units healthy.
* Maintenance: Humans need more food, sleep, and warmer clothes in Winter. Prepare for a hard Season by having enough gold in your treasury to finance the extra needs of your Units.
* Movement for Land Units and Aircraft: Mud, floods and ice can all result in a terrain being harder to traverse, lowering the Movement.
* Movement for Naval Units: Ships are a bit slower in low temperatures because the water is denser, but the overall impact of Seasons on them is lower, that is why there are separate Movement Effects for Naval Units.
* War Weariness per Battle: The last thing your population wants to think about in freezing and starving conditions is War. In severe Seasons, the amount of War Weariness Points for every battle your Units take is increased.
* Food: For most groceries, harvests are in Summer and Autumn, which can result in hunger in Winter and Spring. It can be beneficial to change the focus of your Cities to Food occasionally.
* Production: A lot of energy and resources need to be used for heating your buildings when its colder. This makes the overall City Production output a bit lower in tough Seasons.

For a full list of Effects that are applied depending on the Season and Severity, take a look at the four Seasons listed on the left.

## Severity

Just like the real world, the Season impact on Civilizations can dither a lot. A Summer can be unbearably hot, resulting in crop failure and food shortage. A Summer can be ideal with temperatures that are pleasant for both flora and fauna. A Summer can also be plagued by never-ending rain, making the land muddy and hard to traverse.

Four Seasons emulates seasonal anomalies by assigning a Severity value to each Season at its beginning. This value determines how mild or severe the Effects are. The Severity is in a 1 to 5 range in Summer, Autumn, and Spring and between 1 and 6 in Winter. The higher the value, the worse the Effects.

In order to increase unpredictability and variety in the gameplay, the Severity value is randomized. The previous Severity has an impact on the probability of the new Severity. Overall, the Severity is drawn towards the mid, so a value of 3 is the most likely with extremes of 1 or 5 being the least likely. The probability distributions look as follows:

If the last Season had a Severity of …, the new Severities (ordered as 1 2 3 4 5) have a probability of … in percent:

* 1: 20 40 20 10 10
* 2: 20 30 30 10 10
* 3: 10 20 40 20 10
* 4: 10 10 30 30 20
* 5: 10 10 20 40 20

Additionally, if Autumn had a Severity of 5, the probabilities for the coming Winter are (ordered as 1 2 3 4 5 6):

* 5: 10 10 20 40 10 10

In the unlikely case of a Winter having a Severity of 6, the Spring then acts as if the Winter had a Severity of 5 when it comes to the probability distribution.

## Season Length

You have the option to set a Season Length between 5 and 25 Turns in the advanced options of the game setup. Note that your Season Length is only used as an approximation. A randomized Season Offset can delay or speed up a season change (see the chapter below for more information).

For gameplay and balancing reasons, it is recommended to choose a value that correlates with your chosen Game Speed:

* 5 to 9 for Online (200% speed)
* 7 to 12 for Quick (150% speed)
* 10 to 16 for Standard (normal speed)
* 13 to 20 for Epic (66% speed)
* 15 to 25 for Marathon (33% speed)

The Length of a Season also influences the AI in its decision making. A severe Season can lower the changes of the AI preparing for War. Then, if a mild Season comes up, the AI prepares for War again, but needs enough time to do so. Therefore, the Season Length should be at the upper end if you prefer a bit more aggressiveness and at the lower end if you want your rival Civilizations to be a little more passive. But overall, the influence on the AI is only minor.

## Season Offset

Not only can the Severity of a Season vary, but also, its starting and ending point. A randomized Offset acts for these variances and can delay or speed up the beginning of a Season. This also has an impact on the Length of a Season.

Say that the current game has a Season Length of 10 Turns, and its start Turn is 1. This would mean that a new Season begins at Turn 11, 21, 31, … . Here, the randomized Offset comes into play. The range in which the Season Offset operates is 20% of the Season Length, in this case 0.2 \* 10 = 2 (the Offset is always topped off, for example 0.2 \* 9 = 1.8 is topped off to 1). Subtract and add this value to the original Season change Turns (11, 21, 31, …) and you have your Turn frame for Season beginnings: 11 – 2 = 9 is the earliest possible start Turn, 11 + 2 = 13 is the last possible start Turn.

Note that the probabilities for Season Offsets are equally distributed, unlike the Severity of a Season. Applying this to our example means that the Season change Turns 9, 10, 11, 12 and 13 all have the same probability.

## Visuals

With the big impact that Seasons have on our everyday lives, it was important to create a feeling of authenticity for every Season. It is nice to have an Icon indicating the current Season, but with a bright and sunny map, you cannot feel the Season. How your Units are wandering in the snowy and enchanting forests in Winter, or in the dry and dead empty desert in Summer.

That is why the animated time of day changes with the Seasons in this mod. Every time a Turn begins, the time of day skips a few minutes or hours, based on the Season Length. This has an impact on the color and lighting of the map:

* Summer is from 11:00 to 17:00 with the sun zenith making the map bright and warm.
* Autumn is from 17:00 to 23:00 with the sunset slowly darkening and cooling the map.
* Winter is from 23:00 to 05:00 with the night making the map dark and cool.
* Spring is from 05:00 to 11:00 with the sunrise slowly brightening and warming up the map again.

# Summer

*Come into the warm Summer sun, makes you feel forever young.* – *Summer Sun* by Shooting Star

Summer with a Severity of 4 (no Effects) is always the first Season of the game.

Summer is the first of the Four Seasons. Its characteristics are very high temperatures and being the primary harvest time. This leads to a lot of bonuses for Units and Cities.

## Severity 1

Units

* +10 Healing per Turn
* +1 Movement for Land Units and Aircraft
* +1 Movement for Naval Units

Cities

* +1 Food per Tile
* +1 Production per Tile

## Severity 2

Units

* +5 Healing per Turn
* +1 Movement for Land Units and Aircraft
* +1 Movement for Naval Units

Cities

* +1 Food per Tile

## Severity 3

Units

* +5 Healing per Turn
* +1 Movement for Naval Units

## Severity 4

No Effects.

## Severity 5

Units

* +1 Maintenance

Cities

* -1 Food per Tile

# Autumn

*The falling leaves drift by my window, the Autumn leaves of red and gold.* – *Autumn Leaves* by Eric Clapton

Autumn is the second of the Four Seasons. Its characteristics are low temperatures and being the secondary harvest time. This leads to a lot of negative Effects for Units, though the Effects on City Yields are rather low.

## Severity 1

Cities

* +1 Food per Tile

## Severity 2

No Effects.

## Severity 3

Units

* +20% Experience
* -5 Healing per Turn
* +1 Maintenance

## Severity 4

Units

* +40% Experience
* -5 Healing per Turn
* +1 Maintenance
* -1 Movement for Land Units and Aircraft
* +16 War Weariness per Battle

Cities

* -1 Food per Tile

## Severity 5

Units

* +40% Experience
* -5 Healing per Turn
* +2 Maintenance
* -1 Movement for Land Units and Aircraft
* +16 War Weariness per Battle

Cities

* -1 Food per Tile
* -1 Production per Tile

# Winter

*But you came like a* [*Winter*](https://www.definitions.net/definition/winter) *snow, quiet and soft and slow.* – *Winter Snow* by Jennifer Emard Marler Band

Winter is the third of the Four Seasons. Its characteristics are very low temperatures and very low crops. This leads to a lot of negative Effects for both Units and Cities.

## Severity 1

Units

* +20% Experience
* -5 Healing per Turn
* +1 Maintenance

Cities

* -1 Food per Tile

## Severity 2

Units

* +40% Experience
* -5 Healing per Turn
* +1 Maintenance
* -1 Movement for Land Units and Aircraft
* +16 War Weariness per Battle

Cities

* -1 Food per Tile

## Severity 3

Units

* +40% Experience
* -5 Healing per Turn
* +2 Maintenance
* -1 Movement for Land Units and Aircraft
* +16 War Weariness per Battle

Cities

* -1 Food per Tile
* -1 Production per Tile

## Severity 4

Units

* +60% Experience
* -10 Healing per Turn
* +3 Maintenance
* -1 Movement for Land Units and Aircraft
* -1 Movement for Naval Units
* +32 War Weariness per Battle

Cities

* -2 Food per Tile
* -1 Production per Tile

## Severity 5

Units

* +80% Experience
* -10 Healing per Turn
* +4 Maintenance
* -2 Movement for Land Units and Aircraft
* -1 Movement for Naval Units
* +32 War Weariness per Battle

Cities

* -2 Food per Tile
* -1 Production per Tile

## Severity 6

Units

* +100% Experience
* -15 Healing per Turn
* +5 Maintenance
* -3 Movement for Land Units and Aircraft
* -2 Movement for Naval Units
* +48 War Weariness per Battle

Cities

* -3 Food per Tile
* -2 Production per Tile

# Spring

*I’ll be blooming like the spring flowers, grateful and beyond for all these hours. – Coming Home* by Isabel

Spring is the last of the Four Seasons. Its characteristics are high temperatures and low crops. This leads to low Effects on Units, while a few negative Effects are in place for Cities.

## Severity 1

Units

* +5 Healing per Turn
* +1 Movement for Naval Units

## Severity 2

No Effects.

## Severity 3

Units

* +1 Maintenance

Cities

* -1 Food per Tile

## Severity 4

Units

* +20% Experience
* -5 Healing per Turn
* +1 Maintenance

Cities

* -1 Food per Tile

## Severity 5

Units

* +40% Experience
* -5 Healing per Turn
* +2 Maintenance
* -1 Movement for Land Units and Aircraft
* +16 War Weariness per Battle

Cities

* -1 Food per Tile