

## More Storm Secrets

When CO<sub>2</sub> and other greenhouse gases trap heat in the atmosphere about half of this heat is redirected back to the land and ocean surface. The top few metres of the oceans store as much heat as the whole atmosphere. Most of our weather comes from the oceans. The global sea surface temperature as a result of Climate Change is approximately 1 degree Celsius higher now than 140 years ago. Most of this temperature increase has occurred since 1960. This warmer surface water dissipates more readily into water vapour, facilitating the growth of storms. The extra moist air provided by the warmer surface water, being lighter than drier air, rises faster further *increasing the rate of the central pressure fall* of the developing storm. Storm growth requires an increase in the sustained wind speed and this is driven by *the rate of pressure fall* according to the Secret Law of Storms\*:

Stated simply:

**At a given wind speed, the marginal rate of increase of sustained wind speed is directly proportional to the marginal rate of pressure fall**

Therefore, global warming of the sea surface layer increases the rate of pressure fall and consequently the rate of sustained wind speed (storm intensity) increases.

In conclusion, climate change caused by the global warming of the sea surface layer means that the rate of pressure fall will be larger than it would be otherwise. This means the *threshold* for storms will be reached sooner. The storms will be more intensity with greater maximum wind speed and destructive potential.

The last three decades has seen an increase of about 15 percent in tropical storm intensity. This represents an increase in the destructive potential of these storms of 52 percent. The number of severe storms worldwide has doubled in the last thirty five years.

\*find more details by using the Secret Law of Storms button on [www.worldstormcentral.co](http://www.worldstormcentral.co)