



## IEAGHG Information Paper; 2013-IP3: To Sequester or Capture and Store, that is the question

**Background: Recent article in Science Daily entitled: Public Acceptance of Climate Change Affected by Word Usage. Michael O'Brien University of Missouri**

The basis for the paper was the premise that public acceptance of climate change's reality may have been influenced by the rate at which words moved from scientific journals into the mainstream. O'Brien and his colleagues documented how the usage of certain words related to climate change has risen and fallen over the past two centuries. Understanding how word usage affects public acceptance of science could lead to better science communication and a more informed public. In the popular literature, they found that several words related to climate change diffused into the popular vocabulary over a 30-50 year timeline. The study found that, by 2008, several important terms in the discussion of climate change had entered popular literature from previous technical obscurity in the early 1900s. These terms included: Biodiversity, Holocene, Paleo-climate and Phenology. Not every term was adopted at the same rate, or achieved the same degree of popularity. Biodiversity, for example, came into popular use quickly in only a few years in the late 80s and early 90s. Other terms, like Holocene or phenology, have taken decades and are still relatively uncommon.

To observe the movement of words into popular literature, O'Brien and his colleagues searched the database of 7 million books created by Google. Out of interest I repeated part of this experiment on line at: [http:// books.google.com/ngrams](http://books.google.com/ngrams) using the terms: Sequestration, CO<sub>2</sub> sequestration, capture and storage, carbon capture, and CO<sub>2</sub> capture and storage. Listed below are the data reports on these word selections.



Search in Google Books:

[1800 - 1818](#)

[1819 - 1828](#)

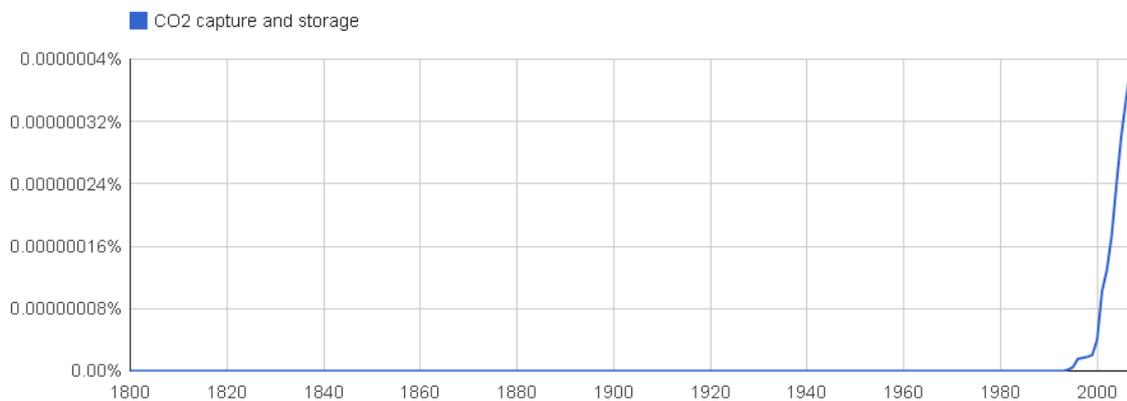
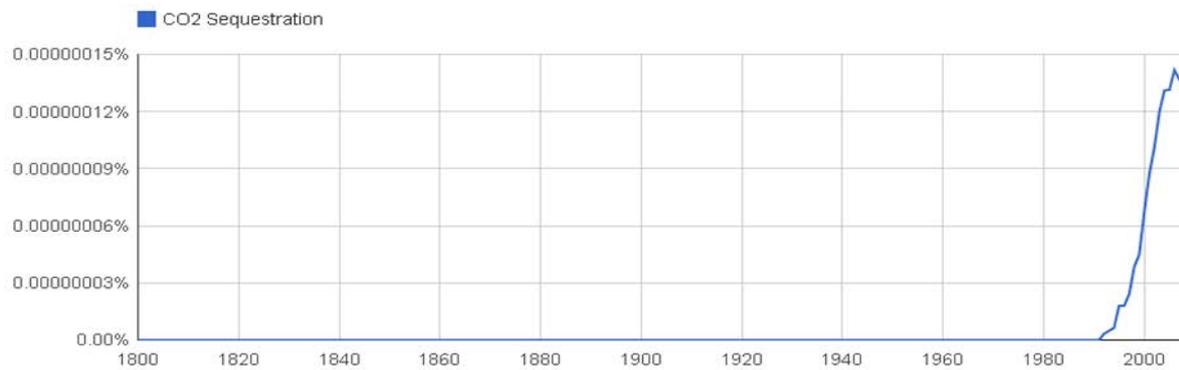
[1829 - 1881](#)

[1882 - 1985](#)

[1986 - 2008](#)

[Sequestration](#)

English



Note searches for geo-sequestration gave a similar pattern to CO<sub>2</sub> sequestration, with most references in Australian press, the only region that expressly seems to use the geo-sequestration term. Similarly searches for CO<sub>2</sub>/carbon/carbon dioxide capture and CO<sub>2</sub>/carbon/carbon dioxide Storage all come out the same as CO<sub>2</sub> Capture and Storage. A search on CCS was not undertaken as the abbreviation can refer to more than Carbon Capture and Storage.

It seems that many words relating to CCS have only diffused into the popular vocabulary since the mid 1990's. This is a similar trend to that of biodiversity from the University of Wyoming Study



Capture and storage shows a slightly different trend coming in slowly since the mid 1920's. In the early cases the literature refers to the capture and storage of data, radio waves signals etc., only from 116 onwards does the literature more commonly relate to the topic that we know as capture and storage.

The most notable difference is that for sequestration. I recall being at one of the early, (if not the first) CSLF conferences, where it was raised that sequestration refers to kidnapping in the Latin based languages. In the 1800's to 1980's it seems to have been both a legal term referring to the confiscation of property, lands etc., and a more popular term for referring to separation of people or services. The legal use is common in Scotland, in UK law and in US law and I have even found references in books on Egyptian Law and Czechoslovakian law in these times. From late 1990's on sequestration seems to be more commonly used in books relating to climate change but is used broadly as referring to geological, mineral, biological, and terrestrial sequestration activities. There are also texts on haematology where sequestration seems to be used I reference to concealment, as well as cropping up in legal texts again.

I am not an anthropologist but if we follow The University of Wyoming's thought patterns, then CO<sub>2</sub> capture and storage has been more regularly used in books and texts from the early 1990's onwards and should therefore be starting to become more familiar and hence its meaning better understood. With regard to sequestration this term has been in common use for centuries and should be familiar to many. However it is a term that has many different applications and uses, although generally based around the idea of separation, concealment, confiscation etc. In my interpretation, that suggests that the term might be more confusing than capture and storage and its underlying message may not strictly convey the idea of safely storing CO<sub>2</sub> rather just concealing or hiding it.

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March 2013