

POST

# What's . . . "Water"?

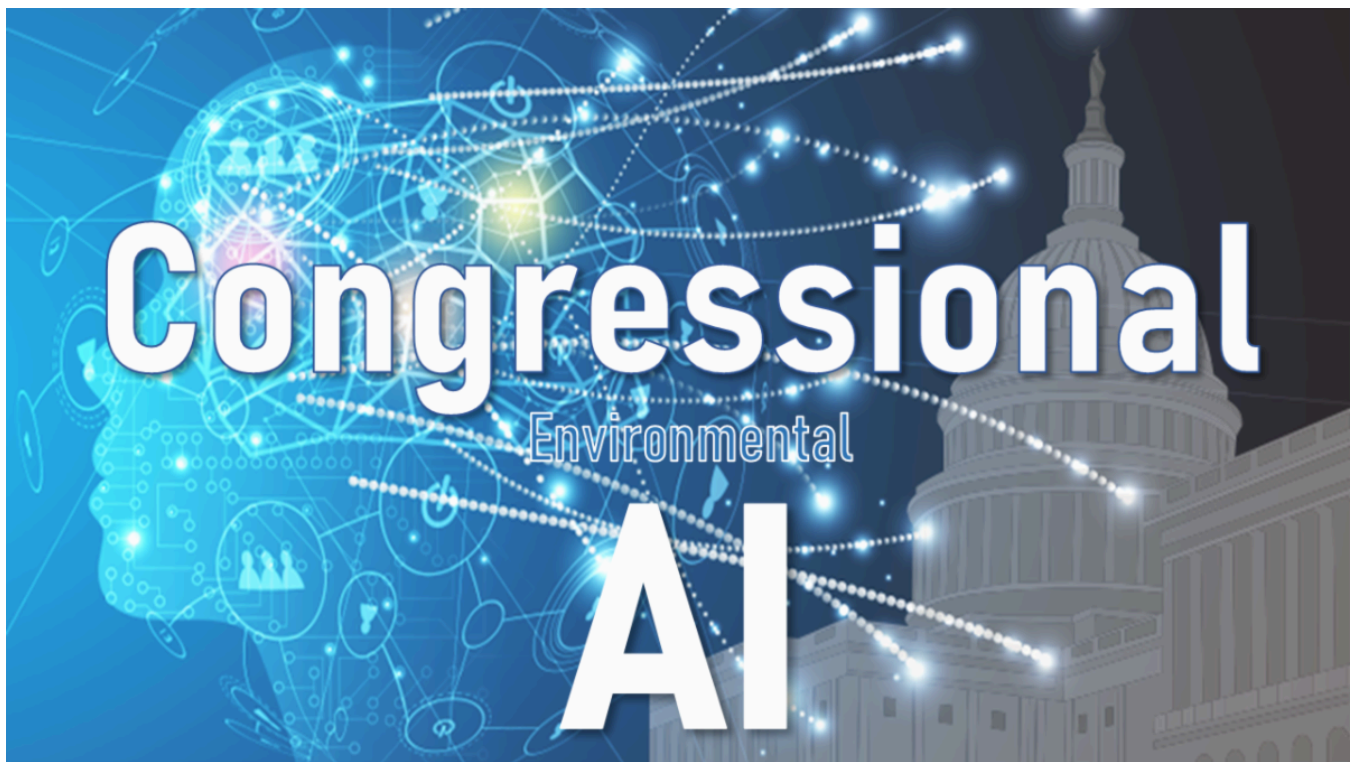
September 19, 2021

Congressional Artificial Intelligence-----Definition of "Waters of the U.S."

What is

"Water"?

Congressionally it's unclear. We know what water is. We know what it does. We know the chemical composition. But we don't know the definition yet (i.e. "water of the U.S. (



- Less about finding just the right words to describe water.
- More about finding just the right level of protection.

Artificial intelligence and quantum technology can help us effectuate policy goals through more direct algorithmic implementation in an increasingly digital world (see below) ...



---“Why are we using words to define water?”

---“We’re giving linguistic definitions to environmental terms that shouldn’t have linguistical definitions.”

---“There are only 179,000 words in the English language. How can we expect to define what “Waters of the U.S.” means in all situations with only 179,000 words?”

---“The best way to avoid a grammatical argument is not to talk.”

---“Lots of people want to argue over what a word means. I’m back to the more fundamental question ... why are we still using words?”

—“I wouldn’t use numbers to write poetry. And I wouldn’t write what’s increasingly becoming digital algorithms using words.”



## How to Protect a Faster and More Digitally Controlled World



Improving

Data Transfer

Humans & Nature



1. LANGUAGE WILL IMPROVE

Recent Elon Musk tweet:



**Lex Fridman** @lexfridman · Aug 22, 2021



Replying to @karpathy

If we consider language a technology, we've explored it deeply and still keep exploring with some help from AI.



**Name** ✓

@elonmusk

My son asked if we would still speak English 7000 years from now. I said probably not. There was not even the faintest hint of English 7000 years ago.

1:19 AM · Aug 23, 2021



10.7K



1K



Copy link to Tweet

Musk sometimes overplays the future. Here I think he's underplayed it. I don't think there's any chance we're speaking English in 7,000 years ... or French, or Spanish ... Human language will change.



Current human language is wonderful, but it's really really really slow. Human language conveys data at only about **39 bits per second** ([https://r20.rs6.net/tn.jsp?f=001jmnix7eNqsNfXM\\_rrZlshXMIKqSPkN1lRqukQZKriPNCGLKNG8JhyqFez98S5ty7gNSHAScJP4pG1](https://r20.rs6.net/tn.jsp?f=001jmnix7eNqsNfXM_rrZlshXMIKqSPkN1lRqukQZKriPNCGLKNG8JhyqFez98S5ty7gNSHAScJP4pG1))

NvrLI3-6bxhLlVvtDAdvjmU4Apf8ZL7tmPHeLDS9Zdx6SJA vQ3OTmojiZGDsFs5lhxDkHND5onA5ze-KNmFsnfh-6Os8Dw\_Xpm5kXVA==&c=&ch=). Interestingly, all human languages transfer information at about the same speed ([https://r20.rs6.net/tn.jsp?f=001jmn1ix7eNqsNfXm\\_rrZlshXmIKqSPkN1lRqukQZKriPNCglKNG8JhyqFez98S5tyG1YHJqRWmBxSydFESRsEF1Lo4qGpKJVWAhFDCPW4-To2NnwUYy1tLSLPWFWD3pg1li4FoocKpyWkgZFc5Zjl1F8Cj-K3-kCNOjkQSdRqT8BxDLZWzLRUMjM-cQjqvXW4qZV1gvp2XGc2UDS8SkdTLqAdC93WI44brgIanhuvs3ytXIkOz9JDoc18mfoIk92-IGbDWnVI2Kk=&c=&ch=\)](https://r20.rs6.net/tn.jsp?f=001jmn1ix7eNqsNfXm_rrZlshXmIKqSPkN1lRqukQZKriPNCglKNG8JhyqFez98S5tyG1YHJqRWmBxSydFESRsEF1Lo4qGpKJVWAhFDCPW4-To2NnwUYy1tLSLPWFWD3pg1li4FoocKpyWkgZFc5Zjl1F8Cj-K3-kCNOjkQSdRqT8BxDLZWzLRUMjM-cQjqvXW4qZV1gvp2XGc2UDS8SkdTLqAdC93WI44brgIanhuvs3ytXIkOz9JDoc18mfoIk92-IGbDWnVI2Kk=&c=&ch=))). Transferring data via writing is even slower. Someone must write. Someone must read.

Try this experiment: Think a thought and then try to say it or write it down in less than a second. Not easy is it? Hard to put all the thoughts you would like to convey into words, especially the right words.

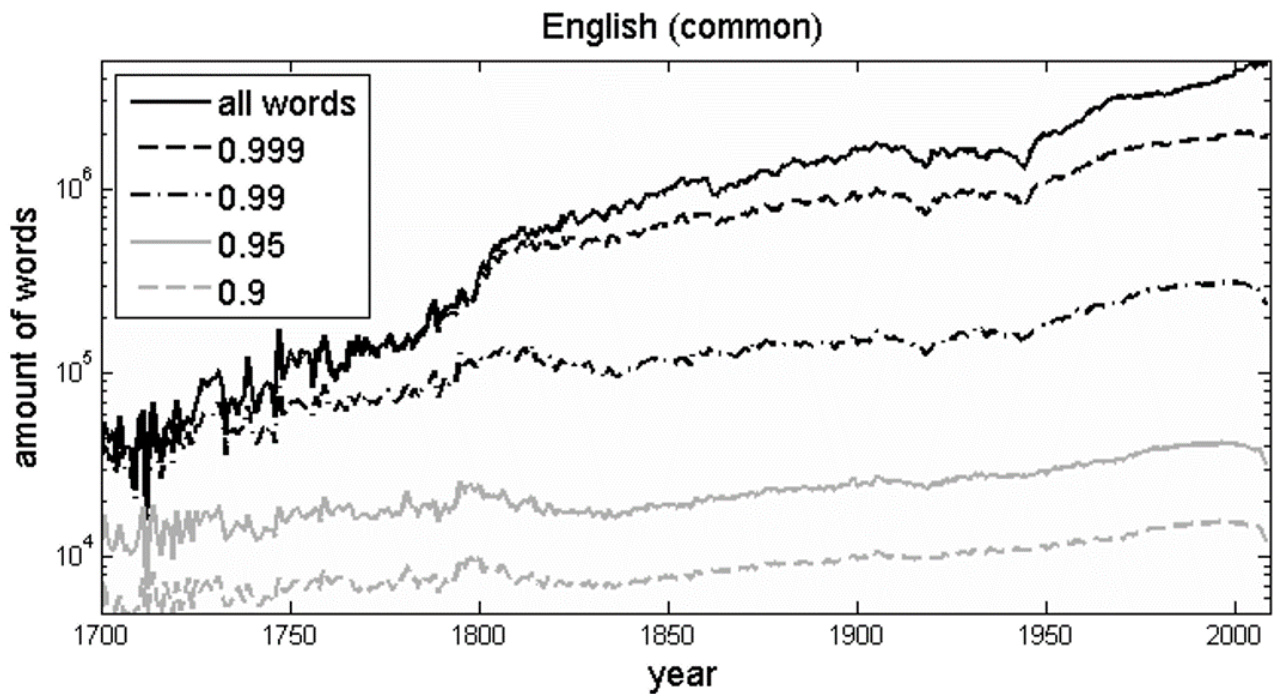


And not only is human language slow, it's really, really, really limiting. Each of us currently commands only about 20,000-35,000 words ([https://r20.rs6.net/tn.jsp?f=001jmn1ix7eNqsNfXm\\_rrZlshXmIKqSPkN1lRqukQZKriPNCglKNG8JhyqFez98S5ty801SfhvwoGJboUQUzRfxWXOmlsEdJEJmMpiV4UHyyqACTyUOTXHGxJ2PMHnLF\\_i3uS6kNrsqyfCin2qVDfvicD6OTMSkek63awLdLHBi8oQRAIEVsyDEidOldL\\_TdfxfkOTrjPVPs=&c=&ch=\)](https://r20.rs6.net/tn.jsp?f=001jmn1ix7eNqsNfXm_rrZlshXmIKqSPkN1lRqukQZKriPNCglKNG8JhyqFez98S5ty801SfhvwoGJboUQUzRfxWXOmlsEdJEJmMpiV4UHyyqACTyUOTXHGxJ2PMHnLF_i3uS6kNrsqyfCin2qVDfvicD6OTMSkek63awLdLHBi8oQRAIEVsyDEidOldL_TdfxfkOTrjPVPs=&c=&ch=))) we can choose from to share all the facts, ideas, and information that we encounter in the environment and that's in our minds.





The Future is Looking Bright! More access to more language!!!



Connecting with AI either directly or indirectly ([https://r20.rs6.net/tn.jsp?f=001jmn1ix7eNqsNfXM\\_rrZlshXMLKqSPkN1lRqukQZKriPNCglKNG8JhyqFez98S5ty4s6vQ5xB\\_cfLcXVQ6s9BQWcl3C-M5kZhVP2-L5OQKOIzj4pEl-4Us6ltpXBLh14RrN5h1dl5VLVNI59s13Chgw==&c=&ch=](https://r20.rs6.net/tn.jsp?f=001jmn1ix7eNqsNfXM_rrZlshXMLKqSPkN1lRqukQZKriPNCglKNG8JhyqFez98S5ty4s6vQ5xB_cfLcXVQ6s9BQWcl3C-M5kZhVP2-L5OQKOIzj4pEl-4Us6ltpXBLh14RrN5h1dl5VLVNI59s13Chgw==&c=&ch=)), will allow us to access many more words—and create many more words.

- It will really be fun when each of us can access all 171,476 words (or all the words in whatever language you choose)
- It will be really, really fun when each of us can access all the millions of words in all the languages to share with each other.
- It will be really really really fun when each of us humans can access 1,000,000,000,000,000 of “words” to communicate different facts, thoughts, feelings, and ideas to each other.

We will also Find a Better “Language” to Communicate More Directly with Nature



The federal environmental statutes that Congress has addressed to EPA run to more than 2,700 pages in the two large, maroon-colored United States code volumes. The legally binding regulations issued by EPA to implement these statutes fill the 31 ocre-colored volumes of the Code of Federal Regulations. The guidance and other documents issued by EPA to explain or interpret its regulations fill around one million pages and are represented by the 1,250 grey-colored loose-leaf volumes. This does not include the millions of pages of State and local statutes, rules, and guidance that implement the millions of pages of Federal statutes, rules, and guidance.

**“The books behind me are written in a limited language, and do not lend themselves well to algorithmic adaptation.”**

**Quantum Data**



**Classical Data**

(binary computer)

01001010010101  
 10101101110000  
 10011110000111  
 10101011111000  
 01010111100011  
 01010101010101  
 11010110101011

**Biological Data**

ACTGACTGACTTAGG  
 ATTCGAGATCCATTC  
 CTTGAGACCTTTTT  
 ACCCCTATAGCATCA  
 TTCCAGGATCTATTAT  
 CCTATATATAGGGGC  
 CCATATAAATGGGCT

**Human Data**

Language data (letters), sensory data (visual images), numeric data (numbers)



**CONNECT THE DATA**

# Human Environmental Data

Language Data,  
Visual Data,  
Numeric Data

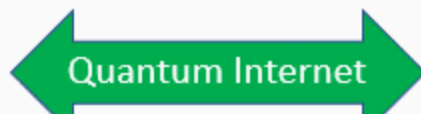


Classical Computer  
Code/Classical Mechanics

01100111001101  
10101101101011  
11100011100110  
01010110010100



Quantum Mechanics/  
Probability Wave  
Function/Quantum Computing



# Nature Data (Direct)



---“Nature isn't  
classical, dammit.”

- Richard Feynman



Human

Nature

Nature and humans communicating more directly with each other . . . It's simpler.

## 2. DATA SPEED WILL IMPROVE



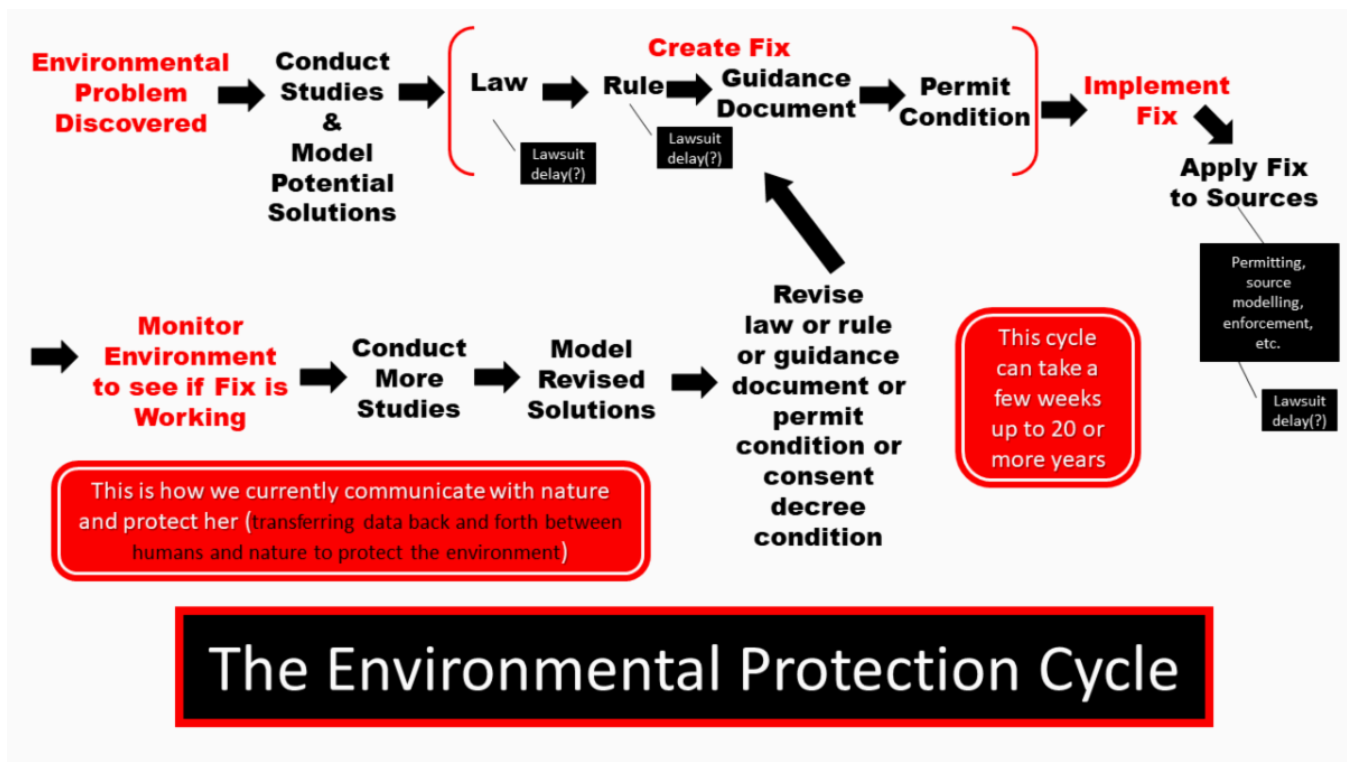
Current Speed

& Data Transfer Cycle Between Humans and Nature

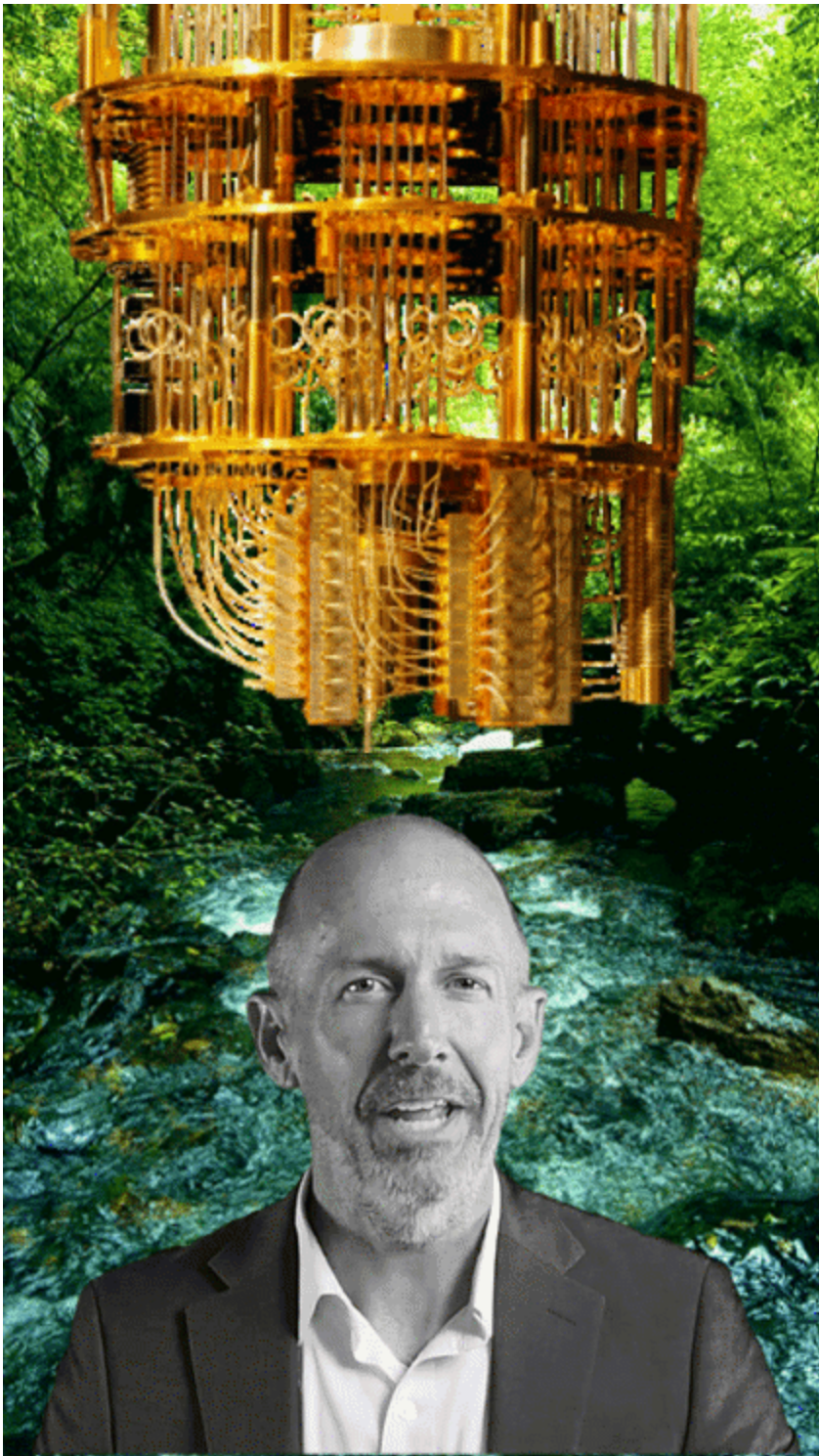
Human-to-Nature

Data Transfer









AI running on quantum data ... nature's more direct data.



Nature is Moving Very Quickly

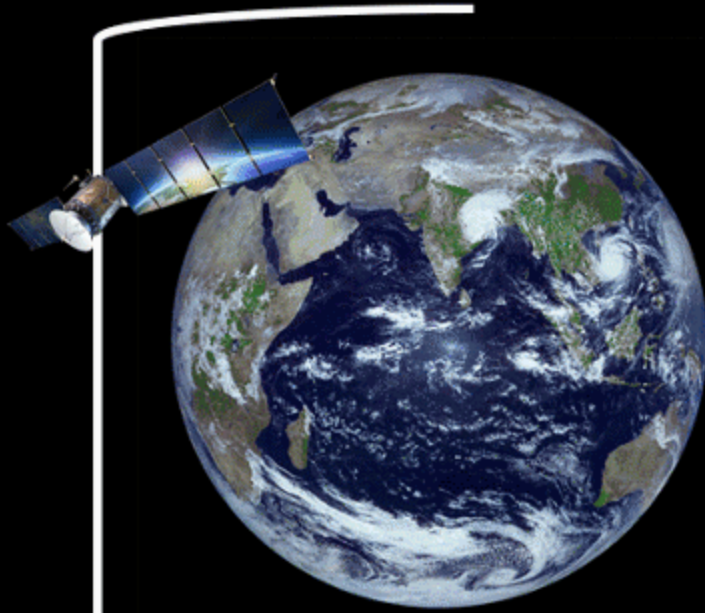
Speed of the System EnviroAI is Building

Design Goal:More Quickly and Clearly Exchange Data Between Humans and Nature,  
and Nature and Humans

A computer can currently transfer data at 14,099,511,627,776 bits per second.



# AI



Infinity-Imagined.tumblr.com

## EnviroAI



AI and Quantum Computing







**Enviro**.AI<sup>TM</sup>



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Original source: Constant Contact campaign

Markdown source: <https://jedanderson.org/posts/whats-water.md> (https://jedanderson.org/posts/whats-water.md).

Source on GitHub: [/src/content/posts/whats-water.md](https://github.com/jedanderson432/jedanderson-site/blob/main/src/content/posts/whats-water.md) (https://github.com/jedanderson432/jedanderson-site/blob/main/src/content/posts/whats-water.md).