

# Topping up carbon-accounts

## A handyman's basic guide

Chris Henggeler, February 2019 (updated 03.2020)

For all higher forms of life fundamental eco-system processes accomplish the function of an umbilical cord. They connect us to whatever keeps us alive. - When all is well, we thrive. The bulk of what we grow, then eat and pass through our bodies is water, carbon and sunshine.

Simply put: **carbon is nature's cash**. Nature has been trading in carbon for a very long time.

**Sunshine** drives carbon-transactions. Without **water** many simply cannot take place.

(Of these three ingredients, scientists find carbon to be the easiest to measure.)

Scientists also warn that too much carbon has already accumulated in the air. More is still going up.

Above the political noise, we hear: "Reduce the amount of carbon being pumped into the atmosphere!"

Others voice: "Tax carbon." "Sequester carbon." "Top up carbon sinks." "Drawdown."

**Growing "Circles of concern", limited "circles of influence".**

(Using words of Steven Covey, this describes most positions. - Carbon-farmers focus on opportunities of "influence"!)

Carbon, like water (and cash) needs not only to be held in appropriate accounts. It also needs to cycle in a productive fashion. **The devil is in the dynamic complexity** of processes involved.

While the **total amount of carbon remains the same, many variables are forever changing:**

- **Banks** (Think: oceans, underground, in/out of the ground, on the ground, atmosphere...)
- **Accounts** (Think: living cells, organisms, species, dead cells, charcoal, coal, oil, gas, diamonds...)
- **Currencies** (Think: solids, liquids and gas...)
- **Cash-flow** (Think: multiple "transactions" from gas, to liquid, to solid, and back to gas ...)



**Empty**

Easy to measure

*"But what's the use of that?"*

## Abundance



Hard to measure.

*"The stuff keeps moving and does not hang around for long! How can we ever be sure?"*

## Full



Easy to measure and store.

*"We can do better than that!"*

## As carbon farmers we first look at practical aspects of “growing” carbon.

We need to let sunshine and **CO<sub>2</sub> “flow” freely** into carbon-accounts (plants, soils and animals). (*Turn on that “tap”!*)  
We strategically influence processes to replenish specific carbon-accounts as required. (*Facilitate and guide the flow...*)

### Carbon as a gas:

**Plants turn carbon from a gas into liquid carbon.** (*Photosynthesis turns CO<sub>2</sub> taken from the air into “sugars”.*)

The rate of flow into **plant-carbon accounts** is governed by photosynthesis. The rate of photosynthesis is governed by plants. Their nature and level of health, temperature, sunshine and the availability of water are all critical.

### Carbon as a liquid:

**Plants govern the rate of liquid carbon-flow into soil-accounts.**

(*Elaine Ingham and Christine Jones have been explaining related processes for many years.*)

(*Google their names or “soil-foodweb” and “liquid-carbon pathways”*)

**Plant-carbon accounts** include, cell structure, sap, oils and fats. Even, whole plants and plant communities. (*e.g. forest*)  
When plants are eaten, a portion of carbon gets transferred to other **living-carbon accounts**.

**Animal-carbon accounts** too, include cell structure, fluids, oils and fats. Notably also populations of a species! (*e.g. herd*)

**Liquid carbon pathways allow us to refill depleted carbon accounts.** (*microbial and other soil-carbon accounts...*)

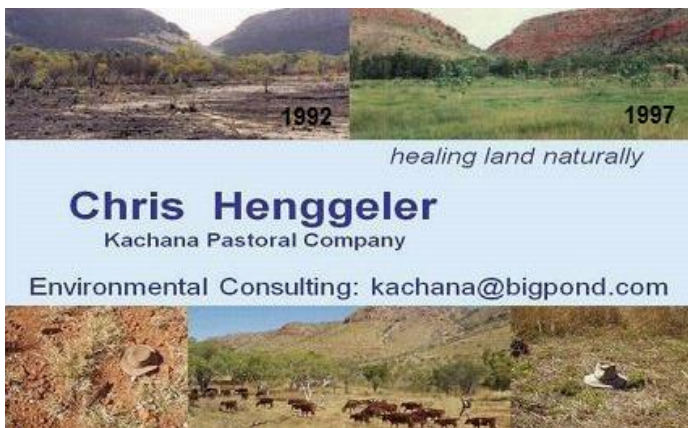
All the while, cells are dying and being continuously replaced. They break down and as with an overflowing jug, carbon is released. Some carbon returns to the atmosphere in the form of gas. Some is recycled and kept on as “working capital”.

With appropriate management, more and more atmospheric carbon can be “transferred” into, and stored in appropriate accounts. Thus, topping up existing carbon-accounts and opening up new ones; some temporary others more permanent.  
**The aim is to optimise the number of topped-up and permanently overflowing carbon-accounts!**

**Carbon as a solid:** Often over-rated in certain forms, this is easiest to measure, but not always that convenient to “save”.  
Dried out dead cells, leaves, grass, timber, charcoal, peat, brown coal, black coal, ... even diamonds.  
(*There are many different carbon accounts and all have their uses. – Context matters!*)

## Now we say: If CO<sub>2</sub> is your problem, then pay us to first top up living-carbon accounts.

Living-carbon accounts in the form of healthy soils, rich biodiverse landscapes with productive savannas, forests and wetlands; clean lakes, rivers and oceans teeming with life. – **Repair the “umbilical cord”, and healing can follow!**



- **Biodiversity** – Key to life on Earth
- **Water Security** ([flood- and drought-proofing](#))
- **Carbon Capture, Storage and Management**
- **Rangeland Health and Productivity**
  - Key to vibrant communities

[The concepts explained \(25 min. YouTube\)](#)

[Introduction to Kachana Station \(3 min. YouTube\)](#)

**[In rangeland Australia the most powerful tool at our disposal is the behaviour of our “new megafauna” \(audio\)](#)**