



**Full lecture series on regeneration**

1. **The science - Why?**
  1. The Soil Sponge and its watershed functions
  2. The Small Water Cycle
  3. Regenerative agriculture
  4. Regenerative grazing
2. **The people factor - How?**
  1. Management for regeneration
  2. Personal development for regeneration
  3. Being strategic about transforming our society

[www.ThorstenArnold.com](http://www.ThorstenArnold.com)

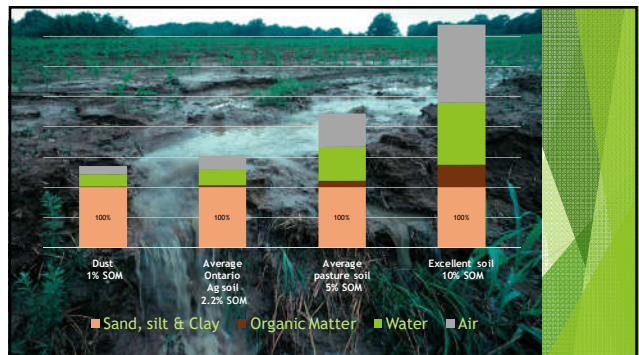
Talks about biosphere regeneration and climate change  
For a large range of audiences.

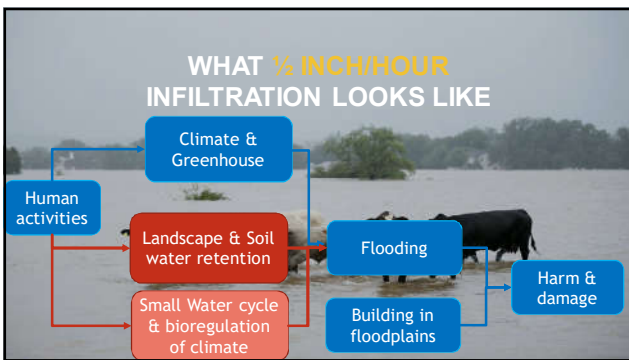
- Restoring the **Soil Sponge** and watershed functions
- Regenerative agriculture, Agroecology, and planned grazing
- The Small Watercycle and biosphere's climate self-regulation
- Planning for Climate resilience
- Getting started in collaborative food marketing
- Holistic and adaptive management
- Managing numerical models in public watershed agencies



**Dr. Thorsten Arnold**  
Climate Change, watershed and regenerative food systems

Part II -  
The Soil Sponge's Watershed functions





How does soil water retention impact flooding?

► Wiarion rainfall data, 1947 - 2014

Precipitation per day [mm]	[inch]	Frequency [per 67 years]	Recurrence [years]	Rainfall, volume over 100km <sup>2</sup> [Million m <sup>3</sup> ]	Remaining runoff [Million m <sup>3</sup> ], with enhanced soil water retention:		
					1"	2"	3"
25-50	1-2"	339	0.2	5.0	2.5	0.0	0.0
50-75	2-3"	26	2.6	7.5	5.0	2.5	0.0
75-100	3-4"	5	13.4	10.0	7.5	5.0	2.5
100-125	4-5"	1	67.0	12.5	10.0	7.5	5.0
>125	>5"	0	?	15.0	12.5	10.0	7.5

Highest possible flow assumed!

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Highest possible flow assumed!

## What is a Flood?

... Insufficient water retention  
for the local rainfall intensity statistics

## What is a Drought?

... Insufficient water storage capacity  
for the local rainfall intensity statistics