

Transition stages towards a regenerative land system:

Biological systems are a balance between the 4 M's

= **Mindset, Minerals, Microbes and Management**

1. **Avoid costly production losses through building on local knowledge** - Find a mentor: a successful rancher, biological consultant or join a discussion group.
2. **Education:** books, courses, workshops
3. **Benchmark:** measure where you are now; soil mineral, biology, leaf tests and photos.
4. **Management, management, management!** Implement practices that increase photosynthesis, rooting depths and soil carbon; grazing timing, avoid bare soil at all times!
5. **First do no harm:** reduce and then eliminate products that blow the microbial bridge; soluble N and P, tillage, glyphosate, fungicides. Buffer chemicals with microbial foods (e.g. Humic acid)
6. **Observe:** pests, weeds and diseases are all indicators for imbalances.
7. **Encourage biodiversity above and below ground:** herbal leys, fodder crops, shelter belts, inter-planting. **diversity, diversity, diversity!**
8. **Address major limitations; air, water, foods and minerals:** 1. Drainage, 2. Soil structure
3. Review soil chemistry.
9. **Apply** broad-spectrum products which feed biology and address major nutrient deficiencies, i.e. Lime, rock phosphate, seaweed, fish, seawater, compost, vermicast, sugar, milk etc.
10. **Health:** Ensure crop and animal health needs are being met, if not, use free choice minerals and foliar sprays.
11. **Monitor and observe changes:** Bric, EC, pH, photographs. Adjust programme if required.
12. **Strategic long term planning:** land use choices. Ranching for resilience.
13. Now you can see your successes, **mentor others!**

This document was created from brainstorming sessions with over 300 biological farmers, growers, researchers, educators and service companies, during the ABF National Roadshow, June 2010. Compiled by Nicole Masters and Christine Jones during the Cromwell Soils First Conference, 30th June 2010.

This document is live, so any suggestions and discussions are welcome www.integritysoils.co.nz

Reading for Regenerative Ag systems

Science in Agriculture - Dr Arden Andersen

Technical, but good in-depth reference book which covers most aspects.

See interview: <https://www.youtube.com/watch?v=juY0J00hUPk>

Foundations of Natural Farming – Dr Harold Willis

Great starting place, covers a broad range of the different aspects

Advancing Biological Farming – Gary Zimmer

More applied and a good practical book for cover crops and farming

Fertility Pastures – Newman Turner (all of his books are good!)

Older text, but not dated, covers good management and growing quality pastures.

What Weeds Tell – Jay McCaman

Awesome reference book covering many US weeds and the soil properties they are indicating

Books available at www.acresusa.com

Watch some of Gabe Browns videos on YouTube

Some of Nicole's You Tube clips:

Part One of a 3 part talk on Microbes, oldie but a goodie ☺

<https://www.youtube.com/watch?v=52o3CSTGQEM>

TEDx talk “A pile of reasons to fall in love with soil”

https://www.youtube.com/watch?v=JE_HHLBP82s

And the “Digging Deeper” DVD is available for \$30 CAD plus P&P for orders email nicole@integritysoils.co.nz