PCBFA
PEACE COUNTRY BEEF & FORAGE ASSOCIATION

International Year of Soils

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Forage Facts

2015 has been Declared the International Year of Soils

by Stacy Pritchard

2015 has been declared the *International Year of Soils (IYS)* by the 68th UN General Assembly. The Food & Agriculture Organization (FAO) of the United Nations will be working within the framework of the Global Soil Partnership to implement IYS 2015. It has been determined by the FAO that "the current rate of soil degradation threatens the capacity to meet the needs of future generations". The primary goal of IYS 2015 is to "increase awareness and understanding of the importance of soil for food security and essential ecosystem functions" (www.fao.or/soils-2015).

The FAO identifes that "soils constitute the foundation for agricultural development, essential ecosystem function and food security and hence are key to sustaining life on Earth."

There are several specific objectives that the FAO has set for IYS 2015:

* Raise awareness among society & decision makers
* Educate the public
* Support effective policies and actions for the protection of soil resources
* Promote investment in sustainable soil management activities
* Strenthen initiatives in connection with the Sustainable Development Goals (SDG) process and Post-2015 agenda
* Advocate for rapid capacity enhancement for soil information collection and monitoring at all levels.

Over the past few years, PCBFA has done a lot of work promoting soil health by bringing experts like Gabe Brown and Dr. Christine Jones and with the introduction of practices like cover cropping. We will also be a part of the ARECA team organizing The Western Canadian Soil Health Conference to be held in Edmonton Dec 8, 9 & 10, 2015. Planning for this conference is well underway, with 2 international speakers already confirmed; Gabe Brown of North Dakota and Peter Donovan of the Soil Carbon Coalition.

PCBFA also has a number of soil health events in the works, including a workshop on measuring soil carbon with Peter Donovan, and Dr. Christine Jones will be back this summer after her successful visit in November. Both Jones and Donovan will be touring the province, doing events with several ARECA groups.

PCBFA and ARECA's role in IYS 2015 will be to deliver IYS 2015 programming, focussing on education and advocating for soil health.

Please visit FAO International Year of Soils (http://www.fao.org/soils-2015/en/) for more information on IYS 2015 and soil health in general.

The Role of Soils —

As ranchers and farmers, we likely know more about soil than most. But as I've learned since starting with PCBFA, there is a lot more to soil than making up the ground we walk on or where we grow our crops. Understanding the role soil plays in supporting our operations can help us to manage soil to increase production and profitability.

So what role does soil play? To put it broadly, they are the basis for production in a wide variety of industries including food, fuel, fibre and medicine. But looking at soil as merely a commercial product used in the manufacture of these products is a mistake. Soil is a living part of the ecosystem that contributes to successful production systems.

Getting into a little more detail:

* Soils contribute to food security
* Soils manipulate water; they store and filter water to help us survive both floods and droughts
* Soils regulate plant nutrient cycles (N, P, K, Ca, Mg).
* Soils exchange gasses with the environment (CO_2, O_2, methane, water vapor).
* Millions of organisms call soil home (bacteria, fungi, worms and more) and soil supports this biodiversity
* Soil helps disperse and distribute seeds for the plant life it supports and is the foundation for terrestrial vegetation
* Soil is also the foundation for our homes, towns and cities.
* Finally, soil has the greatest store of terrestrial organic carbon which helps to combat and adapt to climate change

www.soilcarboncoalition.org

As we can see, soil plays a much bigger role than simply being dirt.

So where do we start? Well ,if we define soil health as "the capacity of soil to function as a living system" we can begin to understand why some soils are less productive. Soil must be living in order to be healthy, and healthy soil is productive soil. There are three main components to healthy soil according to Cornell Soil Health (http://soilhealth.cals.cornell.edu); physical, chemical and biological. The chemical components are nutrients and pH, and these characteristics have been analyzed by scientists and have been utilized by farmers for many years. The physical components include things like compaction and water infiltration. The biological components are the least understood, and there is a lot of research going into how biological components including bacteria, mycohrizal fungi, earthworms and other soil microbes work to build healthier soil.

We've talked a lot about the biological component of soil health in both the October and December 2014 issues of *Forage Facts*. Based on the teachings of both Gabe Brown and Dr. Christine Jones we have learned that "Diversity of plants above ground = Diversity of microbes below ground". The carbon provided to the soil from plants above ground supports the microbial activity in the soil. This increased activity by soil microbes can improve soil structure, increase nutrient availability as well as increase infiltration and water holding capacity. So we can see that by improving the biological component of our soil, we can impact the chemical and physical components as well.

Soils play an important role in contributing to food security. This is a key reason why protecting our soils is so important. The vast majority (95%) of our food can be directly and indirectly produced by soil, therefore producing healthy food for a growing population depends heavily on healthy soils.

It is the physical characteristics of soil that can help us during both droughts and floods. Characteristics like soil compaction and soil structure impact how soils manipulate water.

More Than The Ground We Walk On

By: Stacy Pritchard

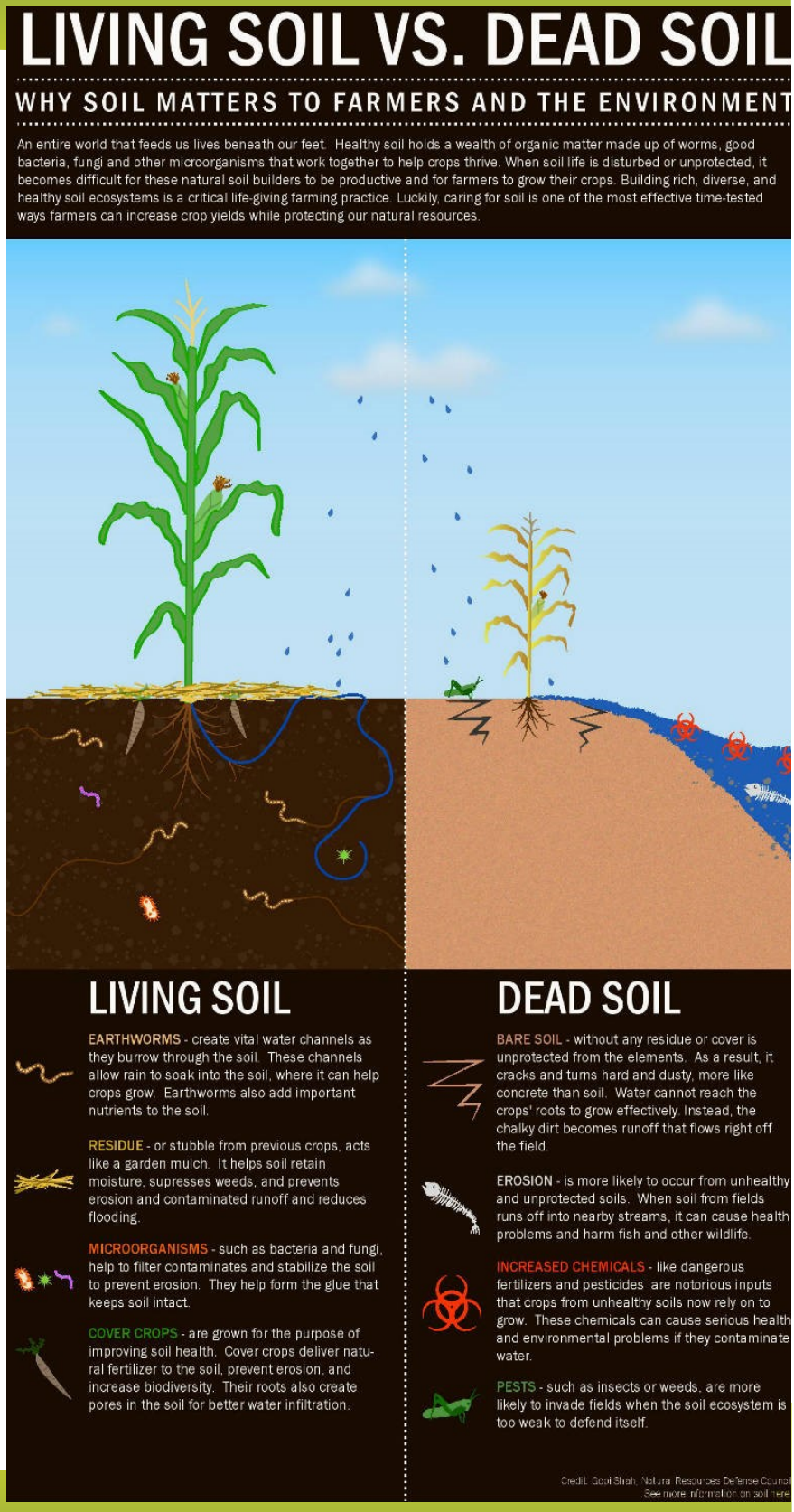
When soils are compacted and have poor soil structure and little stability water cannot infiltrate into the soil, and instead it will run off the surface and not be available to the biology in the soil. But when soil is loose, has a stable structure and is porous, water will infiltrate. Vegetation also helps with water manipulation by slowing down the flow of water so it has the chance to infiltrate the soil. Even the best and healthiest soils can only hold so much water, so once soil is saturated, some water drains into the groundwater, but the rest stays in the soil to be used by soil biology or is evaporated. Infiltration rate is typically expressed in inches/hour and is a characteristic that is impacted by land management. By minimizing soil disturbance and compaction and using high residue crops to increase soil organic matter, the soil infiltration rates can be improved.

The chemical characteristics of soil are what we are most familiar with, especially the role of soil in nutrient cycling. This is a biogeochemical process in which soils store, release and cycle nutrients. This nutrient cycle needs to be balanced in order to support plant and microbial life. Agricultural practices can deplete the nutrients in the soil by converting them into food or feed when used in intensive production systems. We can artificially supplement nutrients by applying fertilizers to restore this balance to get the most out of our crops, but there may be a healthier way to balance the nutrients in our soil with better land management.

As we can see, the characteristics of soil work together to improve the function of soil. As we move forward with IYS 2015, we should think about the role soils play and how increased soil health leads to increased soil function.

A few of the many soil health resources available are:

* USDA Natural Resources Conservation Service: Soils
* FAO International Year of Soils 2015
* Cover Crop Innovators Video Series



Contact us for:

- *Project Ideas*
- *Feed Testing*
- *Environmental Farm Plans*
- *Growing Forward 2 Assistance*
- *Ration Formulation Help*
- *Past Project Information*

Upcoming Events!

Thanks to our Sponsors!

Best Environmental Technologies

Dynamic Seeds Limited

AFSC

Agriculture Opportunity Fund

A proud member of

ARECA

Producer Learning Day

Shelterbelts, Growing Forward 2 & Environmental Farm Plans

- March 10, 2015
- Eureka River Hall
- 9:30am-3pm
  - Hear from the Agroforestry & Woodlot Extension Society about the benefits of Shelterbelts
  - Get an update on Growing Forward 2
  - Environmental Farm Plan Workshop
  - And PCBFA staff will be on hand for assistance with Growing Forward 2 applications

Dugout Workshop

- March 17, 2015
- Valleyview Ag Society Hall
- 1pm - 4pm
- Join us to learn from Alberta Agriculture Water Specialists
  - Dugout design, construction & aeration
  - Dugout biology & water quality troubleshooting
  - In-house treatment of surface water
  - Growing Forward 2 Programs

Environmental Farm Plan *Open House Days*

Debolt	High Prairie
March 27, 2015	March 31, 2015
1-4pm	1-4pm
Community Centre	PCBFA Office Prov. Bldg

Sit down with PCBFA staff for an EFP workshop to either get one started for your farm, or to complete your EFP

Land Acquisition & Planning for the Future

- March 13, 2015 *at the Peace Country Classic*
- 9:45am Registration
- 10am Start and Wrap-up by 11:45am
- Fred Mertz from *Farming for Freedom*
- Learn about land acquisition and tax planning—aiming to help young farmers set up their business to succeed!

Don't Forget to Renew Your PCFBA membership for 2015!!!

Mail your $30 Membership fee to:
Peace Country Beef & Forage Association
Box 2803
High Prairie, AB T0G 1E0

Include any contact information changes.

For more information or to register for PCBFA events please call Stacy at 780-835-6799 or 780-772-0277!

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