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Critical Thinking:  
The Best Risk Management Tool- Holistic Decision  
Making

Shannon Horst

Photo by Dominic Sheehan

# Critical Thinking: The Best Risk Management Tool

Holistic Decision Making  
Agricultural Outlook 2011



# Critical Thinking

“Purposeful, reflective judgment concerning what to believe or what **to do.**”

But, can be *very* difficult  
given a world of  
complexity.

“The world is not only more complex than we can imagine, it’s more complex than we can *possibly* imagine.” - Jim Crofoot.

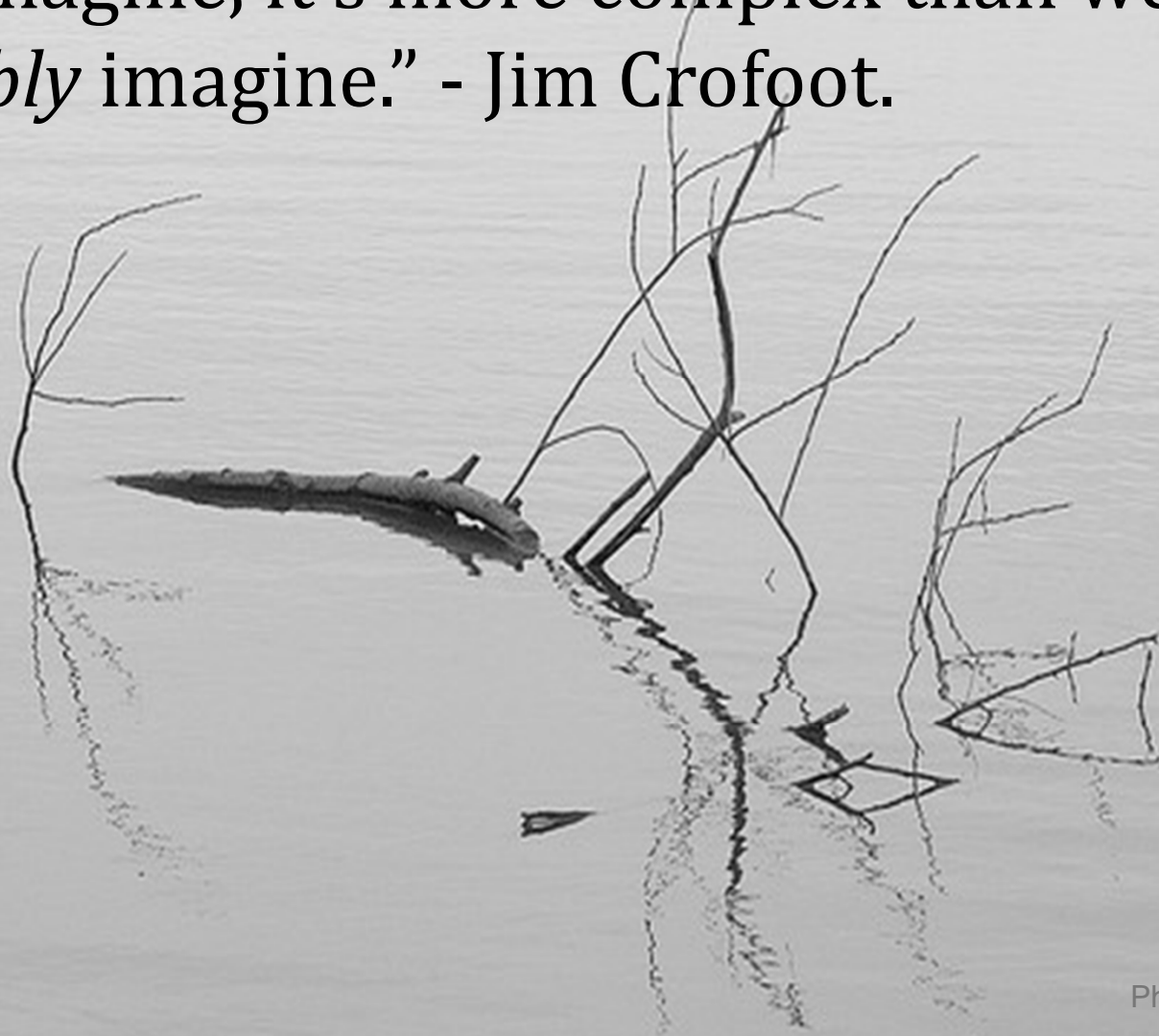


Photo by scot63us

# Critical Risks



Drought, Flooding, Pests, Etc



Failing Rural Economies



Families Leaving the Land



# Mechanical vs Complex

## Things We *Make*

- Transport: Air, Land, Water
- Space Exploration
- Weaponry
- Radios, TVs, Satellites
- Computers, Robotics
- Medical Technology, Genetic Engineering

## Things We *Manage*

- Economies
- Societies
- Rangelands
- Oceans, Rivers
- Fisheries
- Forests
- Wetlands



# Holistic Decision Making

Managing Complexity toward a balance of:

Social  
Financial  
Environmental

Short and Long Term

## Core Decision-Making

General idea of where we are going on our farm, family, or business

Objectives/Problem Solving

Possible Actions

Considerations

Implement Action

Monitor to “see what happens”

## Holistic Decision-Making

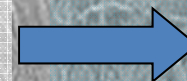
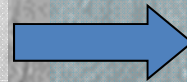
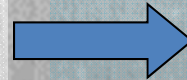
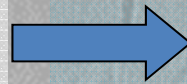
Define All Resources

Define where you are going

Ground decisions in biological foundation

Test Decisions

Monitor to produce results



# Creating Context

## Whole Farm Goal

- Where are we going/what's important to us?
- What do we have to produce/create?
- How *must* our resources function – 1000 years?



# Testing Decisions

- Root Cause
- Weak Link – Bio, Socio, \$\$
- Gross Profit
- Marginal Reaction
- Energy/Money – Source and Use
- Sustainability
- Society & Culture

# Monitoring to Produce Results

Early Warning  
Biological Monitoring



# Producer Example

- 13,000 acres in Eastern NM
- Snakeweed = 11%
- Recommended Action—spray Tordon 22 (DOW Chemical)



# Results

**Temporary:**

**Reduction/setback of snakeweed**

**Increase/loss in production**

**Followed by:**

**Return of snakeweed**

**Fall in production**



**Two treatments - \$26,000**

**No long-term financial return**



# An Alternative Approach that Deals with Complexity

For a Sound Decision:

- Consider ‘the Whole’
- Work toward Holistic goal, not objective (i.e. eradication)
- Functioning of Four Ecosystem processes
- Cause and Effect - what is the *Underlying Cause*?
- Monitor to produce results

# Results after Holistic Decision-Making



## The Original Situation...

- 11 % snakeweed**
- 6 species perennial grass
- 300 animals avg (12lbs/acre meat)
- 1 family earning a living
- Springs dried up (early 1900's)



## Four Years Later...

- 1 % snakeweed**
- 19 species perennial grass
- 900 animals avg (25 lbs/acre meat)
- 3 families earning a living
- Springs re-appeared mid-1990s
- Family vacations and golf



# Allan Savory's Work

Originator of Holistic Management

Working for 50 Years to penetrate policy and institutional thinking

2003 Winner of Australia's Banksia Award

2010 Winner Buckminster Fuller Challenge

Worldwide results...



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