

# Landcare in Iceland

## Building community engagement

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Soil Conservation Service



SCS Iceland

**Helping people heal the land**

Land Stewardship Congress – Barcelona – 5-8 November 2014

# Land degradation and loss of soil “the silent crisis” eroding the pillars of sustainable development



*Iceland - showcase for both  
destruction and restoration  
of natural resources*



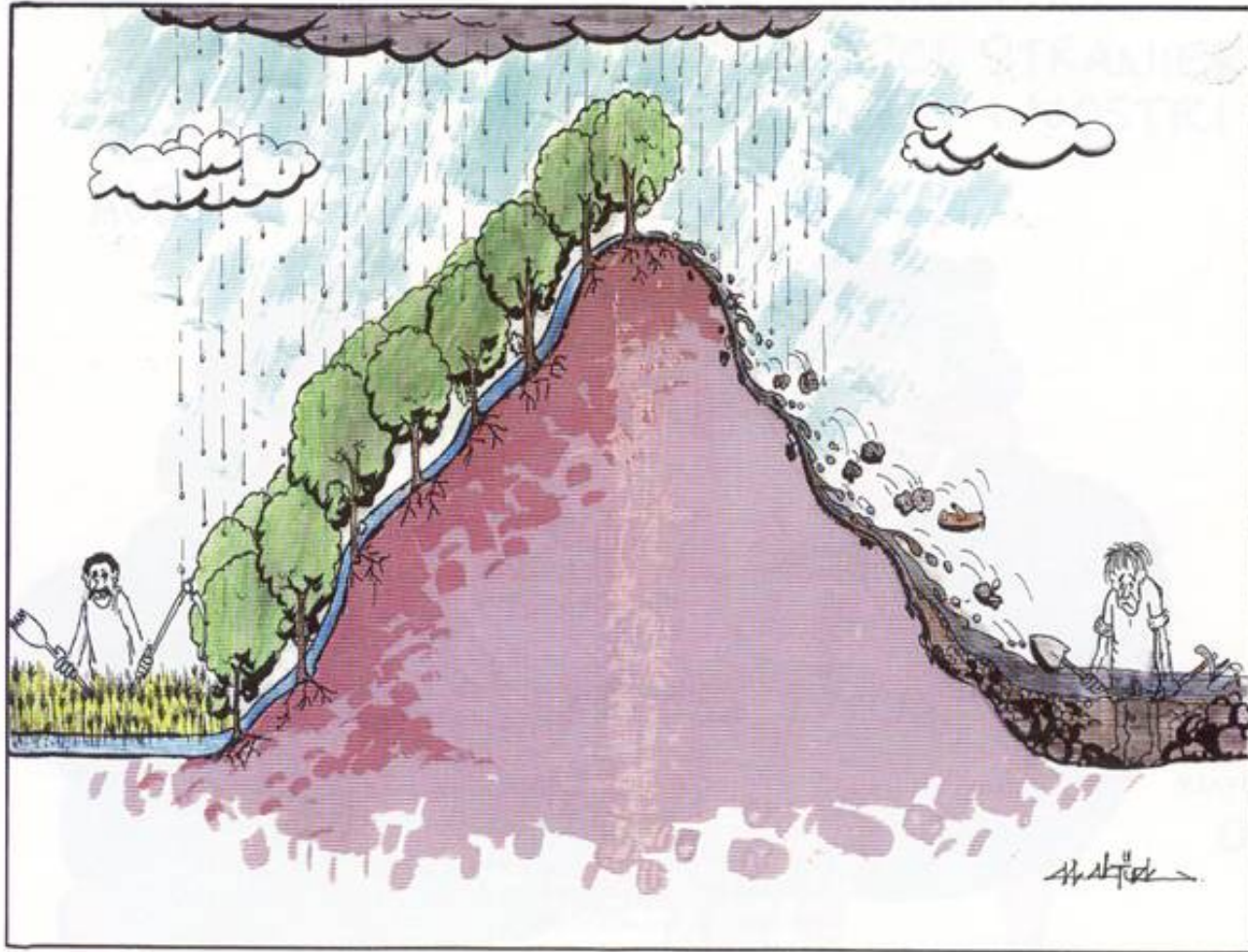


1100 years of human settlement interacting with forces of nature have created Iceland's largest environmental problem





# The consequences of unsustainable land use



Source: CDD Comics

# 1907 – A law on forestry and prevention of soil erosion



**The numerous success stories!**  
**“An inspiration of hope”**

# 1. The era of top-down approaches

- 1907-1990 Institute staff + machinery
  - Little community involvement
  - Low land user responsibility
- Localized work
  - Curing symptoms, not causes
- Slow development of community awareness and engagement





## 2. Lack of problem acceptance

- The highly visible destruction
- Reluctance to accept
  - Deep agricultural roots
  - Powerful land users
  - “Erosion talk harmful to agriculture”



## 3. The media

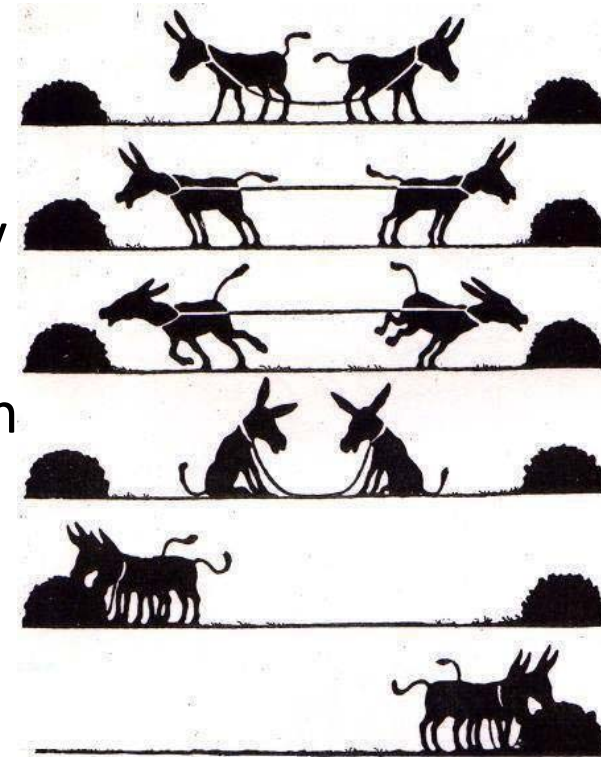
- Massive coverage
  - Focus on the problems
  - Antagonism towards conservation
- But
  - Increased public and peer pressure
  - Agricultural fear of negative publicity
  - Desire for better land husbandry





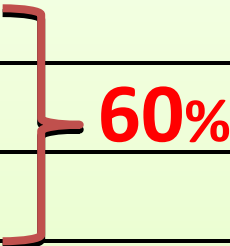
# “Farmers heal the land”

- Established in 1990
  - Adapted from Australian landcare
  - Collaboration and support
  - Improving management and land quality
- Participation
  - A main characteristic of soil conservation in Iceland
- A real a trigger for change
  - Reducing tensions
  - Joining forces
  - Win-Win situation



## Main reasons for participation in the Farmers heal the land project

	<u>%</u>
1. <u>Deliver the land in better condition to next generation</u>	27
2. <u>To improve the image of the farmer sector</u>	18
3. <u>To improve landscape appearance</u>	15
4. <u>Environmental considerations</u>	13
5. <u>To aid in improvement of grazing management</u>	10
6. <u>Expectation of financial benefits</u>	9
7. <u>Ecologically friendly farming</u>	2
8. <u>Societal pressure</u>	0.2
9. <u>Other</u>	5



# The origins of landcare in Iceland

- Forestry Association founded in 1930
  - The biggest NGO in Iceland, 2,5% of population
  - Brought forestry to immense popularity, but
  - “A tree only” focus, lacking the broad goals
- Lions clubs, youth movement ... start revegetation around 1968
  - Parallel with growing international interest in environment
- Landcare (Icel: Landvernd) NGO association 1969
  - Highly active in revegetation and nature conservation
- But at institutional level
  - Top down approaches and little local involvement until 1990



# The multiple roles of landcare

1. Combating land degradation and desertification
2. Foster farmer's and community engagement in sustainable land management
3. Ecological restoration - Improve land fertility and ecosystem services
4. Conserve and restore biodiversity
5. Water filtering and storage
6. New services for society – Climate action
7. Farm profits and livelihoods
8. Community understanding and engagement
9. Generation and uptake of new knowledge
10. Development of land literacy and conservation ethics

The roles of landcare :

# 1. Halt soil erosion and prevent further damage of Icelandic ecosystems



The roles of landcare:

## 2. Foster sustainable land management



Grazing is the main determinant of land health in Iceland





# Tragedy of Commons





Livestock  
grazing

No harm if well  
managed – but ...





# Grazing in area of desertification

*Protected*

*Grazed*





# The sheep industry

- Massive governmental support
  - Production oriented
- A voluntary quality verification schema
  - receive 40% more – but ...
  - Too relaxed criteria
  - Goals of sustainability not attained
- The government still paying at both ends
  - Production
  - Damage from overgrazing
- Must change support
  - Land stewardship payments

The roles of landcare:

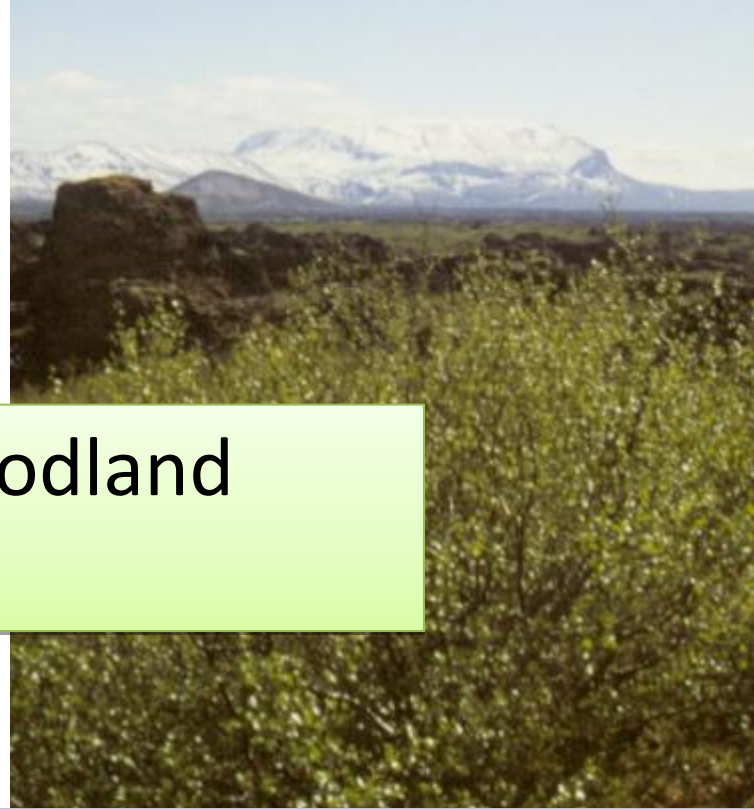
### 3. Ecological restoration



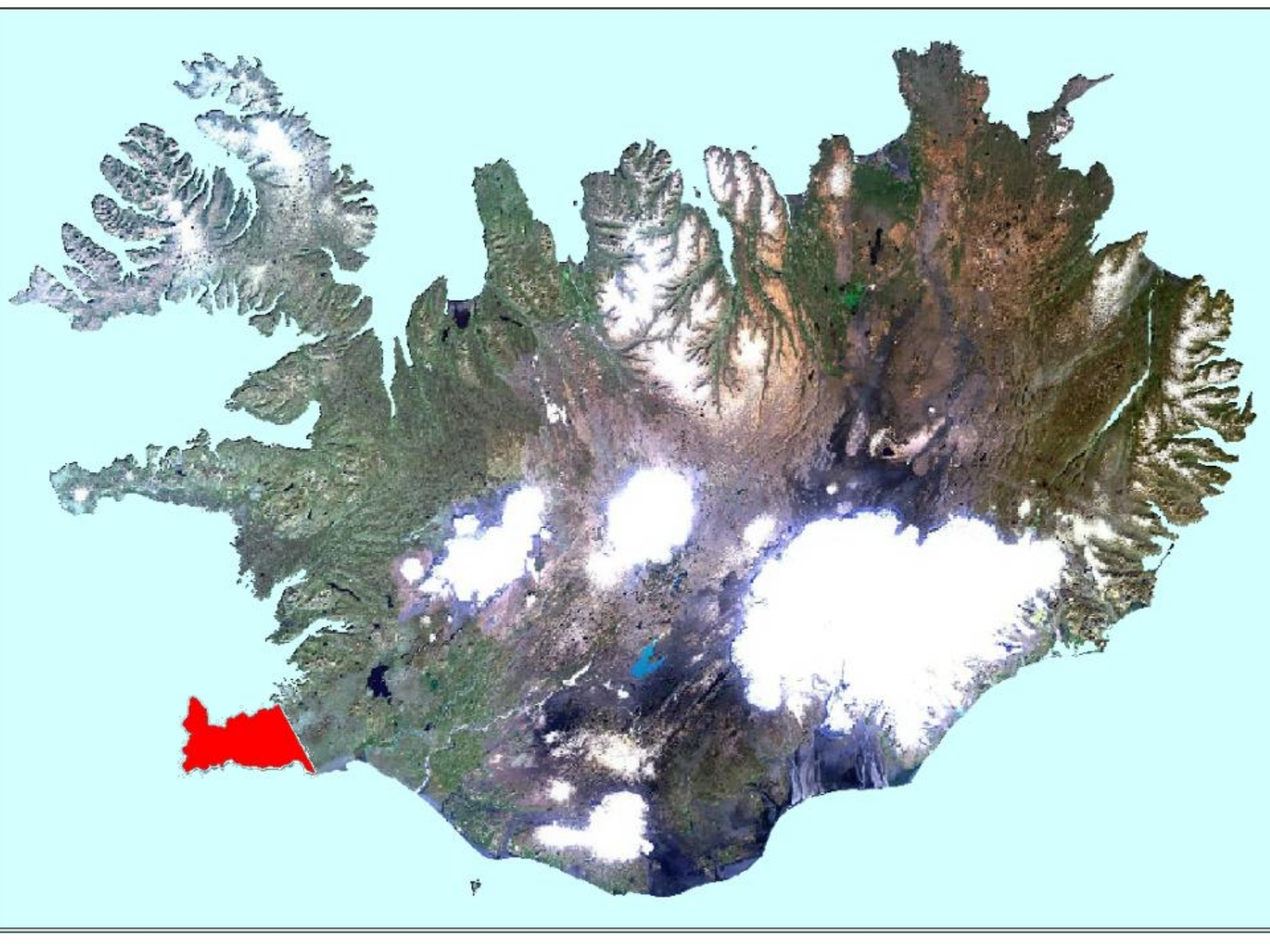


# Deforestation

Iceland lost 95% of woodland cover in 1100 years









# Vegetation and soils

- Lost 50%
- Desertification in a humid environment





## 4. Biodiversity

- Conservation of soil and vegetation continues to be largest national effort in conserving and restoring biodiversity
  - Flora and fauna
  - Complex ecosystems
- A main role of landcare, but
  - Indirect and not targeted
- Forestry
  - Enormous community engagement, but
  - Severe biodiversity issues





## 5. Water

- The effect of soil and vegetation on
  - Runoff
  - Storage and release
  - Water quality
- Large economic implications



The roles of landcare:

## 6. Mitigation of climate change by restoration of land quality

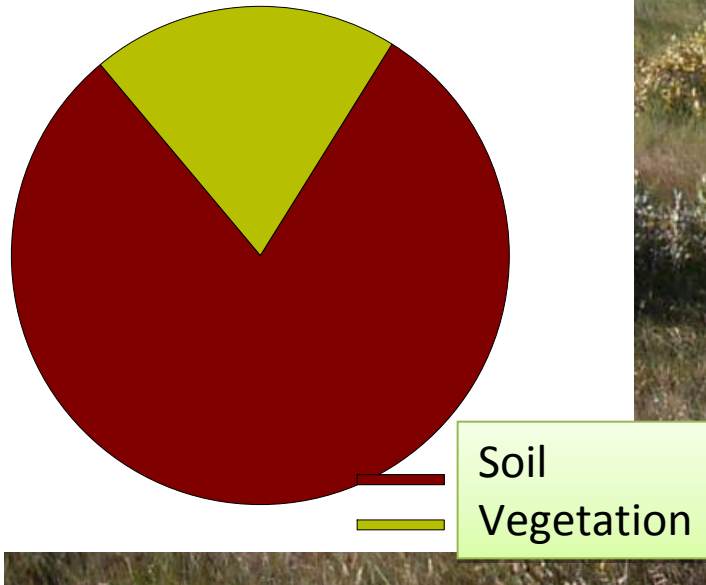
Iceland may have lost 1,6 billion tons of CO<sub>2</sub> equivalents since 874

Carbon sequestration in soil and vegetation an important tool in Iceland's climate action plan





# 60-80% of C stored in soil-permanently





## 7. Farm profits and livelihoods

- More productivity - higher income
- A more healthy landscape
- Improved image
  - Strengthening the social licence to farm



## 8. Community understanding and engagement

- “Better farms” evolving
  - A grassroots approach
  - Fostering farmer skills in planning and decision making
- Local and district levels
  - Linking multiple goals and sectors
- A powerful tool
  - “Ownership” encourages use of plans
  - Awareness and land literacy

TAKING CONTROL:  
farmers talk about  
Property Management Planning



*Adapted from  
Australian experience*

## 9. Maximizing knowledge gain and adoption

- “Farmers heal the land”
  - Power of the grassroots research
- A quiet global revolution
  - Monitoring, research, ...
  - Manifold knowledge gain
  - Environmental literacy
- Many names
  - Citizen Science
  - Participatory research
  - Community based research
  - Action research
  - A profound change needed in applied research approaches
- Who poses the research questions?

COMMUNITY ENVIRONMENTAL MONITORING

Focus

### Citizen science BREAKS NEW GROUND

With a history of declining investment in research programs, resources for ongoing scientific monitoring of environmentally sensitive regions within Australia have been limited. But thanks to technology and a growing number of community-based volunteer monitoring groups, enriched environmental data is being collected on a scale that was inconceivable 15 years ago. The question is how we make use of it. Rachel Sullivan reports.

From monitoring the weather, to testing for acidic soils, or counting koalas and tree-kangaroos in the backyard, recording frog calls in ephemeral swamps and searching for sea dragons off the southern Australian coast, people from all over the country are helping to build a comprehensive picture of the changing state of our environment.

Community environmental monitoring (CEM) has a long history in Australia: the Bureau of Meteorology has been using volunteers to collect rainfall data for more than 100 years, while the information in the respected Atlas of Australian Birds is based almost entirely on 5.5 million observations made by amateur birdwatchers.

In recent years growing public awareness of environmental issues relating to land care, conservation and catchment management has brought together scientists, government agencies, academics, concerned residents and landholders in active groups across the country. This burgeoning interest is a worldwide phenomenon, with both multi-national programs like Reefcheck and Earthwatch and local programs such as wetland monitoring in Namibia, birdwatching in the UK and pollution monitoring in India all adding up to useful capacity in the ongoing need to collect data across vast geographic areas.

Coupled with an explosion in the availability of off-the-shelf technologies, such as mobile phones, GPS systems, digital cameras and the Internet, community groups now have an unprecedented ability to accurately log and record the data they gather and to effect real change in the environments in their care.

“Monitoring the environment is part of who we are,” says Jason Alexandra, one-time head of Earthwatch and now General Manager Basin Program Implementation at the Murray-Darling Basin Authority. He also co-authored “Listening to the land,” a report which catalogued community environment monitoring groups in the mid-1990s. At that time it was estimated that there were around 130 000 people involved, but that number has since risen dramatically, with approximately 300 000 people regularly involved in Frogwatch, Saltwatch and Streamwatch alone.

“Observing patterns in nature is part of the set of skills that helped us survive in the wild, and still help us survive in today’s urban jungle,” Alexandra says. “Although our modern lifestyles tend to insulate us from nature, there is enormous enthusiasm in the community for observing and monitoring events and changes in the environment, and there are a lot of networks that occur outside any government support.”

He says community engagement in these programs has two tiers of benefits: the contributions the huge observational effort makes to environmental science, and education of the people involved.

Andrew Campbell, formerly involved with Landcare and Land and Water Australia, is now Managing Director of sustainability consultants, Triple Helix. He agrees with Alexandra, believing that CEM programs help the community become more scientifically literate.

“As the recent bushfire events in Victoria showed, people need to have a better understanding of critical factors like the



School kids from Burrumbuttock Primary School (via Albury NSW) participated in a RabbitScan field excursion to check for rabbits, dung, warrens and vegetation damage. One of the kids said this was the best day at school he ever had, particularly when a local turned up with ferrets to flush rabbits out. Source: Earthwatch Institute

10 ECOS

140 | 130-138 | 2009



The roles of landcare:

## 10. Fostering land literacy – ethics - stewardship

Tell me.

I forget.

Show me.

I remember.

Allow me to do it.

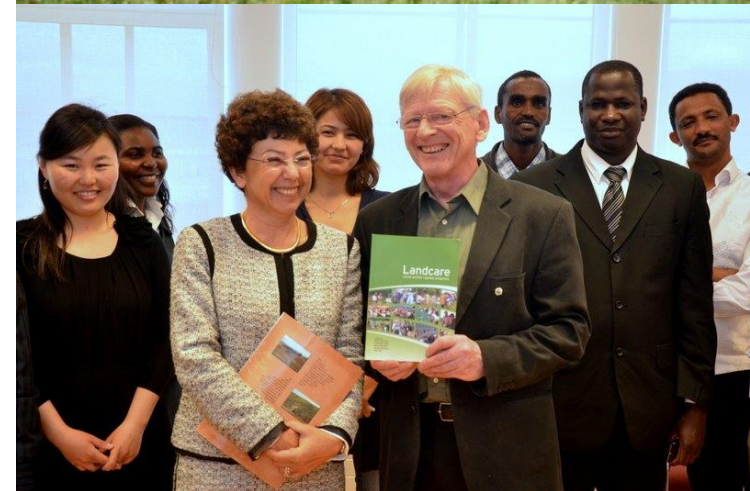
Then I understand.



*Old Chinese proverb (from English to Icelandic and back to English!)*

# In conclusion

- Environmental conservation and restoration:
  - Participatory approaches
  - Fostering community engagement
- Landcare
  - A rapidly growing international movement
  - Has many names globally
- New frameworks required
  - All levels
  - Science – policy – action
  - Landscapes – not “spot” focus





**Thank you!**

