

Conservation Science, Doing Right and Walking Humbly: An A Rocha Perspective

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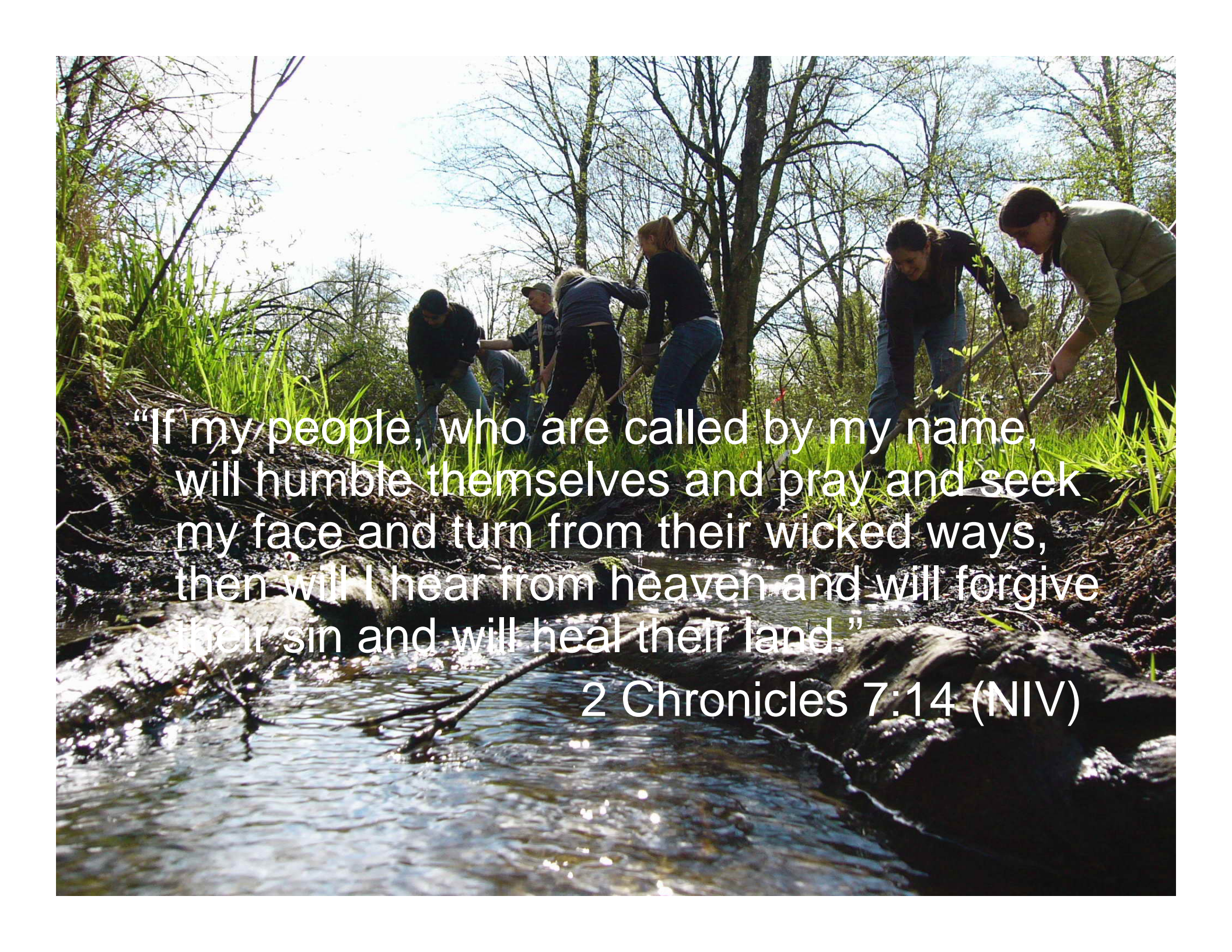
A ROCHA CANADA



A Rocha Canada board
ca. 2004



Glen Carlson



“If my people, who are called by my name, will humble themselves and pray and seek my face and turn from their wicked ways, then will I hear from heaven and will forgive their sin and will heal their land.”

2 Chronicles 7:14 (NIV)

Why and how

- “What we can see are the loving purposes of God in the earth’s very making and sustaining. As we ourselves respond in ways he provides, so we understand better that he is far more committed to creations’ restoration and renewal than we could ever be. We are promised his wisdom for our work and his hope to guide us to good solutions. Both can make an intensely practical difference to each working day.” Peter Harris, founder of A Rocha, *Kingfisher’s Fire* p. 212



Introduction: What is A Rocha?

- “A Rocha is a Christian nature conservation organisation, our name coming from the Portuguese for “the Rock,” as the first initiative was a field study centre in Portugal” **A Rocha website**
- <http://video.google.com/videoplay?docid=8095633102368868684&hl=en>

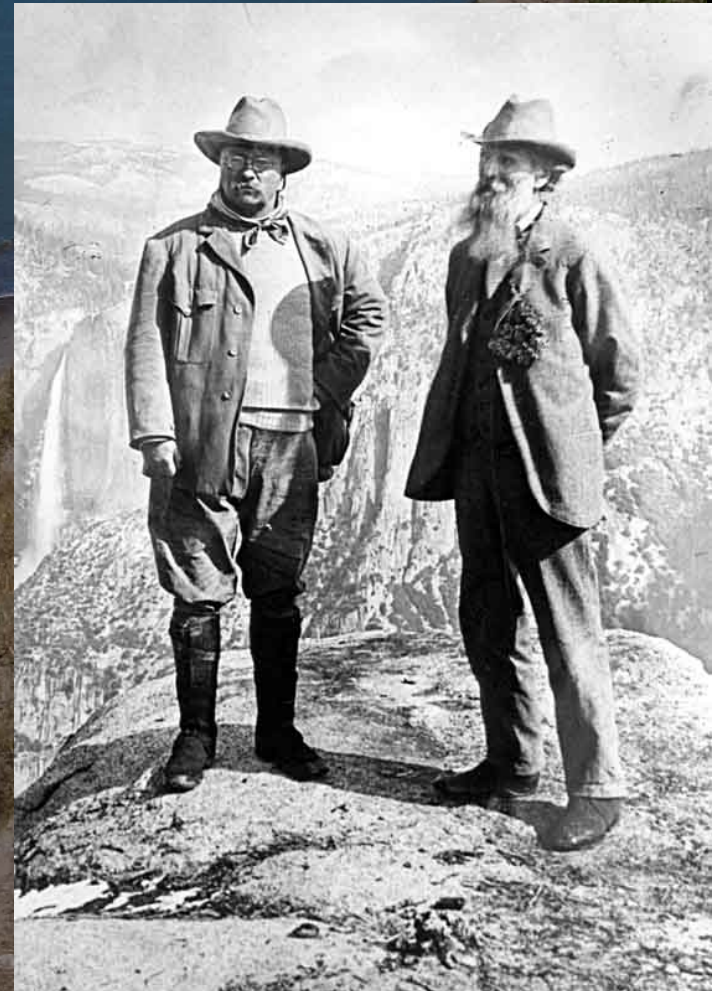


The A Rocha Commitments

- **CHRISTIAN** - Underlying all we do is our biblical faith in the living God, who made the world, loves it and entrusts it to the care of human society.
- **CONSERVATION** - We carry out research for the conservation and restoration of the natural world and run environmental education programmes for people of all ages.
- **COMMUNITY** - Through our commitment to God, each other and the wider creation, we aim to develop good relationships both within the A Rocha family and in our local communities.
- **CROSS-CULTURAL** - We draw on the insights and skills of people from diverse cultures, both locally and around the world.
- **COOPERATION** - We work in partnership with a wide variety of organisations and individuals who share our concerns for a sustainable world.

Roots of Conservation Science

- John Muir , founder of the Sierra Club, wrote articles like “God’s First Temples: How Shall We Preserve Our Forests”
- Muir greatly influenced President Roosevelt’s thinking



Roots of Conservation Science

- Aldo Leopold argued for a **land ethic**
- “a land ethic, of course, cannot prevent the alteration, management, and use of these ‘resources,’ but it does affirm their **right** to continued existence...”



Flowering of Conservation Science

- U.S. Fish and Wildlife Service biologist, Rachel Carson authored “Silent Spring” – a wake up call to many after a long winter of post-war materialism



Flowering of Conservation Science

- Society for Conservation Biology arose from an impassioned speech by Michael Soulé at a meeting in San Diego in 1978
- Conservation Biology now one of the most highly cited journals
- numerous practitioners
- It is a “crisis discipline” (Soulé)
...perpetually in crisis



What does the flower look like?

1. Studies diversity of life itself
2. Value laden and mission driven
3. Advocacy oriented
4. Crisis-oriented discipline
5. Integrative and multidisciplinary
6. Concerned with evolutionary time
7. Adaptive science
8. Legally empowered

Van Dyke, 2003
Wheaton College



What does the flower look like?

- science has trumpeted itself as value neutral...not so with conservation science...

David Suzuki,
Environmental activist



Conservation science values

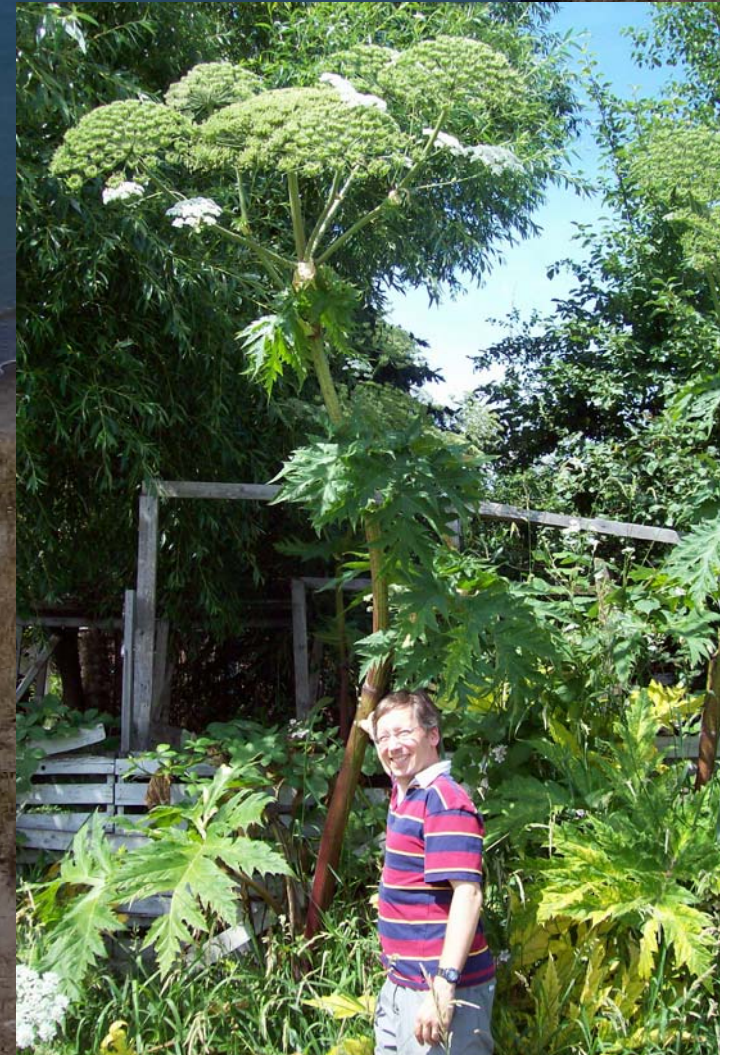
Soulé's normative postulates
for Conservation Biology:

1. Diversity of organisms is good
2. Ecological complexity is good
3. Evolution is good
4. Biotic diversity has intrinsic value, regardless of its utilitarian value



Conservation science values

- Such normative postulates are guidelines only; must be informed by empirical data
- e.g. increasing diversity by deliberately introducing exotic species?



Conservation Science Values

- Where does the locus of an intrinsic value reside?
- Christianity and other religions provide a locus
- This kind of value is key to understanding “Christians in Conservation”

Markku Kostomo, Director
A Rocha Canada – Christians in Conservation



The background of the slide is a photograph of a coastal landscape. It shows a wide, sandy beach in the foreground, leading up to a dune covered in sparse, dry grass and some small purple flowers. In the distance, a large body of water, likely a lake or a wide bay, stretches to the horizon under a clear, bright sky. The overall scene is peaceful and natural.

Conservation Science summation

- goal-oriented field that seeks solutions to the environmental crisis that faces the planet
- not immune to issues that haunt all scientific disciplines
- many conservation science studies fail to make a difference in the real world – at least in the short-term
- can be a discipline in crisis rather than a crisis-solving discipline

A group of six people are engaged in a stream restoration project in a wooded area. They are using tools like shovels and rakes to clear debris and plant vegetation along the banks of a small stream. The scene is set in a forest with many bare trees, suggesting a late autumn or winter setting. The stream flows over rocks and a large fallen log. The overall atmosphere is one of active environmental stewardship.

Conservation Science, A Rocha Style

- **Can A Rocha succeed in avoiding some of the pitfalls, through doing right, loving mercy and walking humbly?**

Conservation Science, A Rocha Style

- Two recent reviews provide a valuable snapshot of A Rocha conservation science
- A Rocha Canada formed a scientific advisory committee in Oct. 2007

A Rocha Conservation Science Review

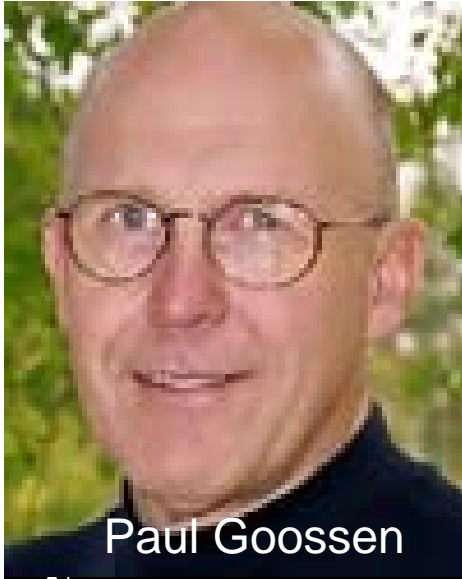


2005-2007

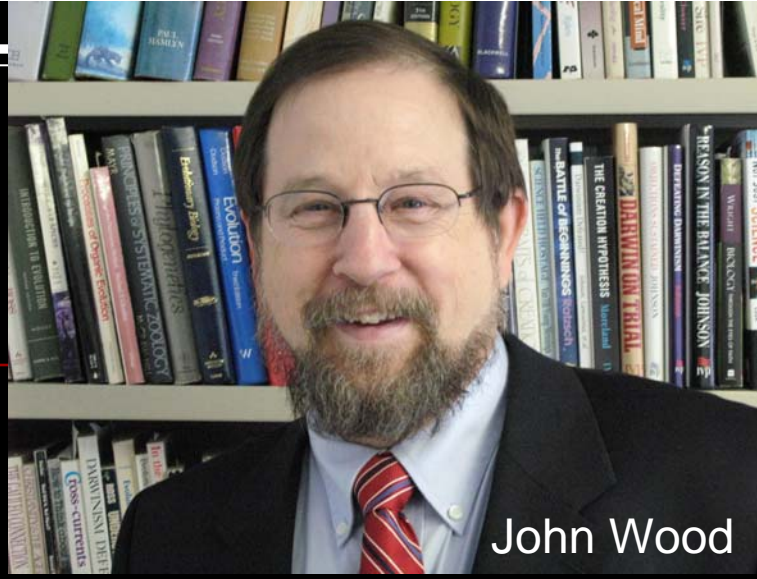
A ROCHA CANADA
Christians in Conservation

CONSERVATION SCIENCE REPORT: 2002-2006

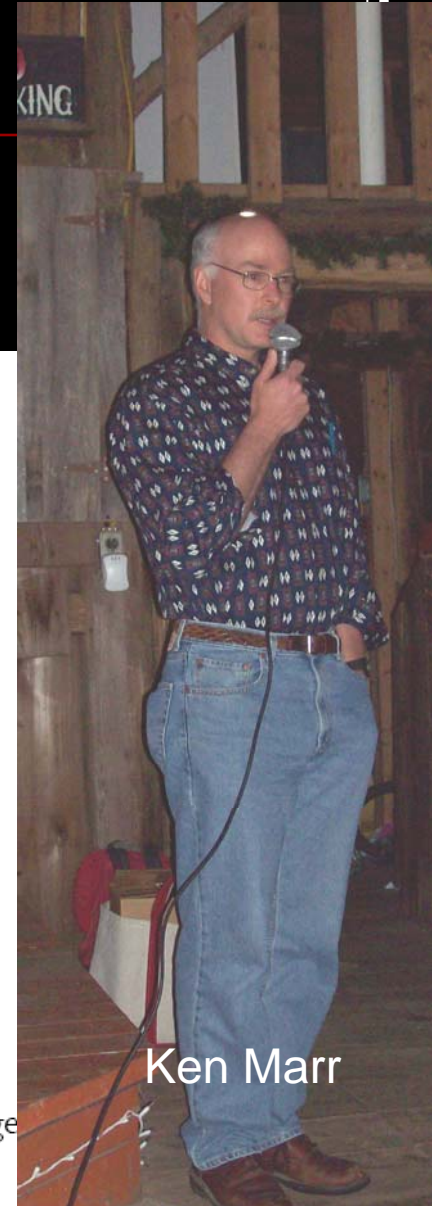




Paul Goossen



John Wood



Ken Marr

A Rocha Canada Conservation Science Advisory Committee

David Clements, PhD., Professor of Biology at Trinity Western University, in Langley, BC, Chair of Committee and ARC Director, who reports to the ARC Board of Directors

Paul Goossen, MSc., Wildlife Biologist with Canadian Wildlife Service, Environment Canada, in Edmonton, AB, who is also on the A Rocha Pembina Valley Advisory Committee

Patrick Lilley, MSc., Consulting Biologist, Vancouver, BC, and former ARC Staff member

Ken Marr, PhD., Curator of Botany at the Royal BC Museum in Victoria, BC

Ken Summers, RPBio., Consulting Wildlife Biologist, Abbotsford, BC

Barb Wernick, MSc., RPBio., Senior Environmental Scientist with Golder Associates Ltd., Vancouver, BC

John Wood, PhD., Professor of Biology and Environmental Studies, The King's University College in Edmonton, AB; Academic Dean, Au Sable Institute of Environmental Studies

A scenic landscape featuring a river or stream in the foreground, with a small boat visible on the water. The background is filled with dense trees, some of which are in autumn colors. The sky is overcast.

Conservation Science, A Rocha Style

- IUCN Red List now at 41,415 species, with 16,306 threatened with extinction
- “Our lives are inextricably linked with biodiversity and ultimately its protection is essential for our very survival” **Jane Smart, IUCN**
- “A Rocha has always believed in and promoted ‘joy of biodiversity’, but we would want to go further in stating the moral imperative of restoring the ecosystems that support the poor, and fulfilling much better the God-given mandate of creation care” **Will Simonson, Scientific Director & Marie Connett Porceddu, CEO, A Rocha International**





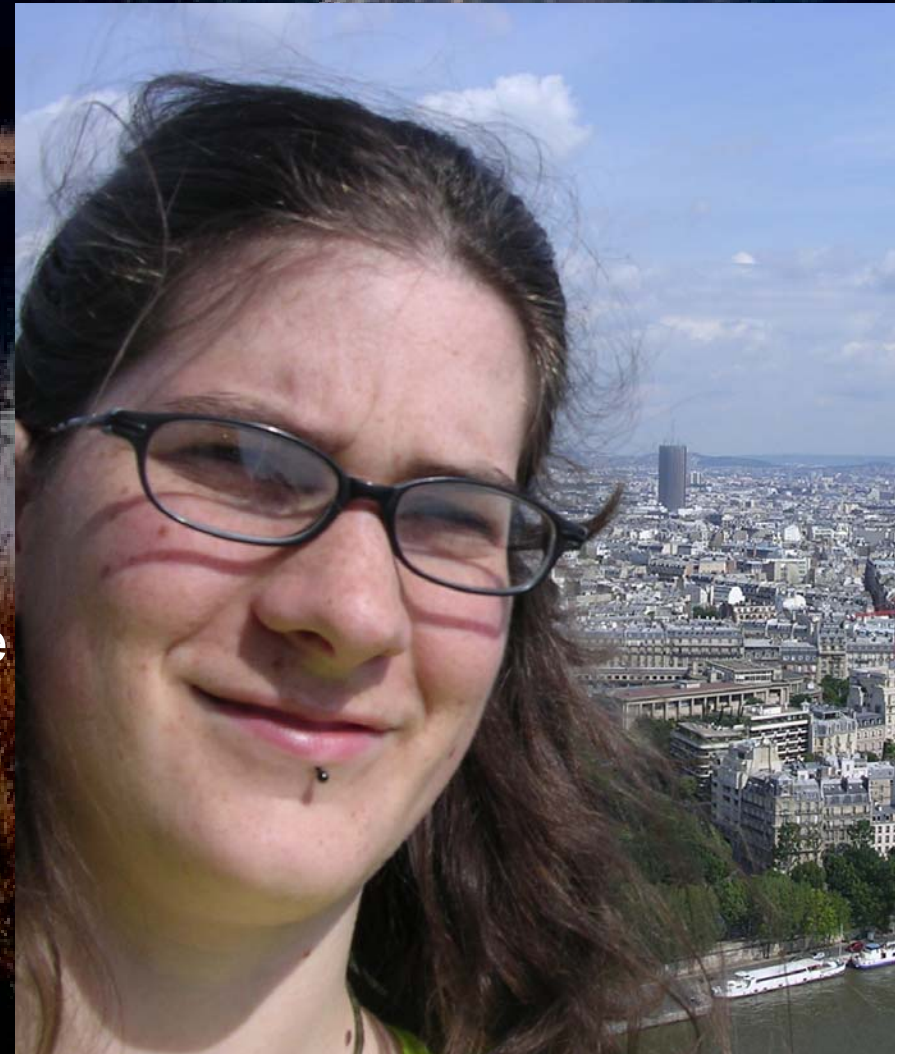
Conservation Science, A Rocha Style

Four principle components:

- 1) Priority species
- 2) Species survey and monitoring
- 3) Ecosystems
- 4) Conservation action

Priority species

- This summer (2008) TWU student Trish Buhler has taken part in research on the threatened roller in Vallée des Baux, France
- A Rocha France benefits from her labor and expertise and Buhler gains course credits for this real life conservation science experience





“My time here has been really good. I have enjoyed meeting the volunteers here as well as some of the A Rocha leaders such as the current directors of A Rocha International as well as Peter and Miranda Harris. I feel like I have been inaugurated into the big A Rocha family. It has been interesting to see how A Rocha works both as a centre of research as well as education and a little community in itself...volunteers work on plant surveys, bird surveys, education pamphlets for landowners about the biodiversity of their land, making jam, helping with the kids, etc. All this happening in one house... It has been really cool to live in a community like this. I think being here has helped me understand a bit better what A Rocha is about.” Trish Buhler



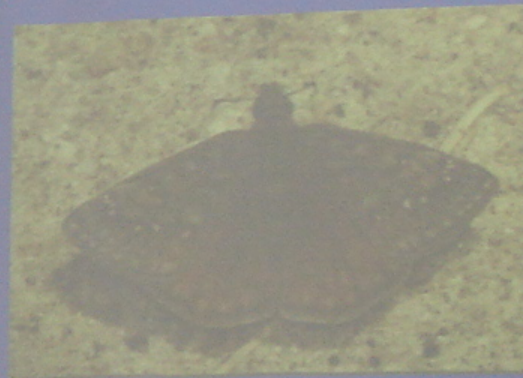
Priority species

- Monitoring of the provincially blue-listed *Propertius duskywing* on Salt Spring Island
- butterfly first spotted on the TWU Crow's Nest Ecological Research Area by Patrick Lilley, TWU field resources coordinator (a 50:50 TWU: A Rocha position)



TWU student
Alicia Marshall
at a Garry oak
ecosystem
research meeting

Erynnis propertius

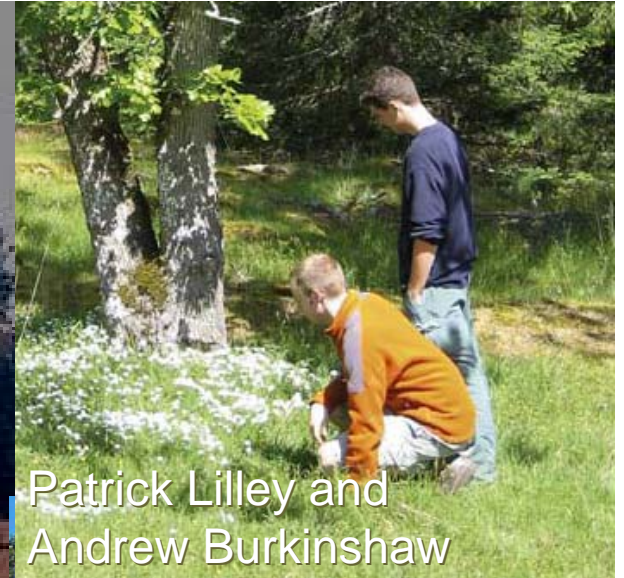


(Davis & Strangeland 2005)

- Large, dark brown skippers
- Part of the family known as *Hesperiidae*, displaying characteristics of both moths and butterflies
- have hooked antennae

Priority species

- the science part of A Rocha conservation science can be advanced through partnering with academic institutions like Trinity Western University



Patrick Lilley and Andrew Burkinshaw



Melissa Oakes and Stephanie Leusink



Oregon forestsnail



Species survey and monitoring

- A Rocha Lebanon has conducted conservation research in the Bekaa Valley since 1997
- Extensive amphibian surveys lead by François Tron of A Rocha France



MARTIN BERNHARD
Tree Frog *Hyla savignii*.

Species survey monitoring



- In 2005 and 2006, 15 migratory raptor species were counted in the Pembina Valley (= 17,580 individuals!)
- represents the largest spring raptor count in western North America



Ecosystems

- A Rocha scientists have conducted a detailed study of the ecosystem impacts of fire in Serra de Monchique, Portugal

One of the heathland plots, showing top: Before the fire (June 2003); middle: after fire (December 2003); and bottom: recovering vegetation (March 2005).



WILL SIMONSON



WILL SIMONSON



WILL SIMONSON

Ecosystems

- A Rocha Canada has been conducting a comprehensive bioassessment of the Little Campbell River Watershed in south Surrey, BC threatened by urbanization



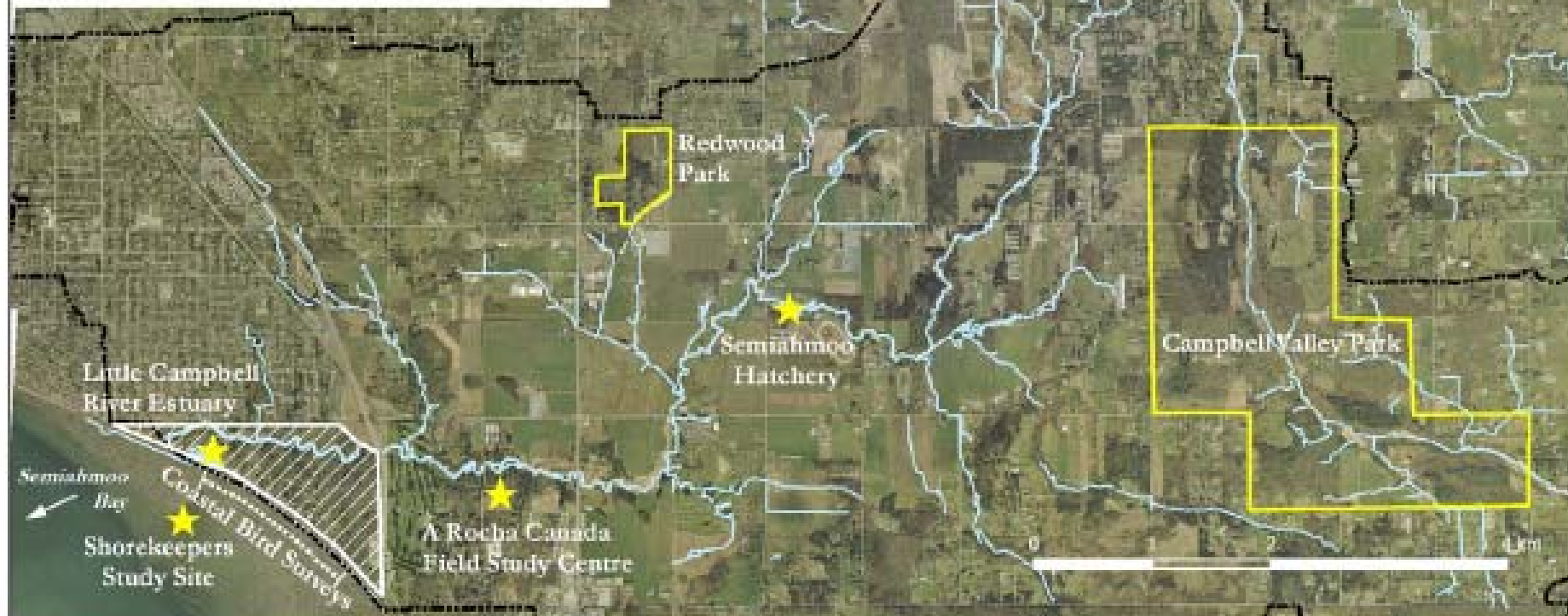
RACHEL KRAUSE



An *Epeorus* species.

Location of A Rocha Canada's Conservation Activities in the Little Campbell Watershed

- Little Campbell Watershed
- Approximate park boundaries
- ▨ Semiahmoo First Nation



Canada - United States border

Figure 2



Conservation Action

- Five stream restoration projects in the Little Campbell River since 2003 where spawning areas for Coho salmon are threatened by increasing urbanization and agriculture



Conservation Action

- Projects have included removing invasive plant species, planting native vegetation, and improving channel habitat, adding spawning gravel and creating pool or riffle habitat



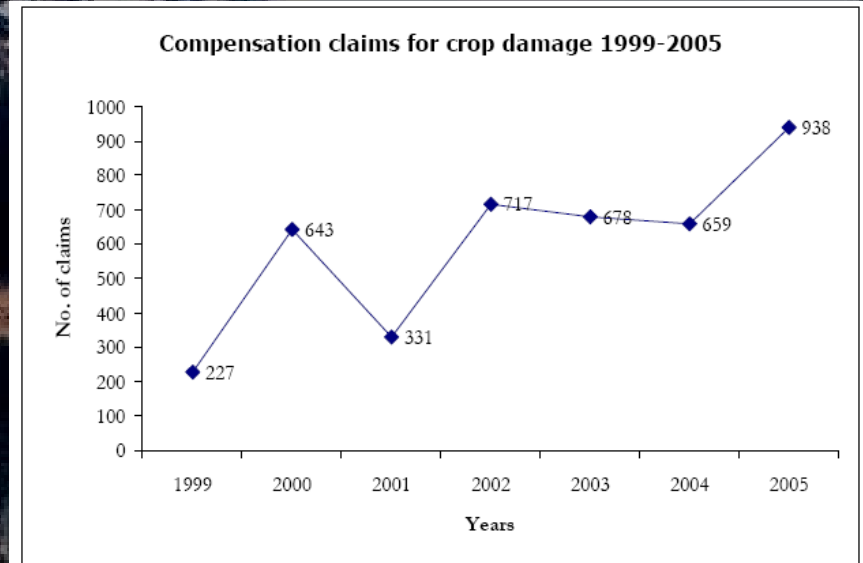
Conservation Action

- *Climate stewards* is an A Rocha program designed to allow individuals to take action to reduce their carbon footprint (www.climatestewards.net)
- Rather than plant fast growing trees merely for the purpose of sequestering CO₂, the A Rocha project in Ghana is aimed at providing benefits to wildlife and local communities



Conservation Action

- In India, A Rocha is working to resolve elephant-human conflicts
- Elephant damage studies combined with interviewing villagers in 11 affected villages to develop conciliatory approaches



An elephant herd from Bannerghatta National Park during the 2007 census operations.



What makes A Rocha Conservation Science distinct?

- Commitment to a specific place: field study centers ensure long-term relationships established with habitats and local residents
- Ultimate goal is beyond temporary rewards: not publications, honors, or even ecological restoration but rather God's glory
- Incarnational approach: A Rocha workers are disciples of Jesus who came to earth to serve in practical and sacrificial ways, doing right and walking humbly

Is the A Rocha approach successful?

- depends on definition of success; the conservation crisis is too great for any single human effort to address
- Progress at local levels
- Success often at a practical vs. academic level
- More can be done to expand the influence of the A Rocha model and strategic partnerships
- More can be done in the spirit of 2 Chronicles 7:14 **“If my people, who are called by my name, will humble themselves and pray and seek my face and turn from their wicked ways, then will I hear from heaven and will forgive their sin and will heal their land.”**



- ... “true worship of the living God is the wellspring for sustainable life. Christians care for creation, not because it is now deeply fashionable, nor because they want their grandchildren to be able to see woodpeckers in the park, or to watch deer in the countryside. For Christians it is simply a matter of a right response to God whom we have come to know as our Father and Creator, who has entrusted his earthly creation to our care. Win or lose, good weather or bad, caring for creation is an act of gratitude and can be offered up intentionally as an ongoing and vivid dialogue with the Lord of life.” Peter Harris, *Kingfisher’s Fire*, p. 152

