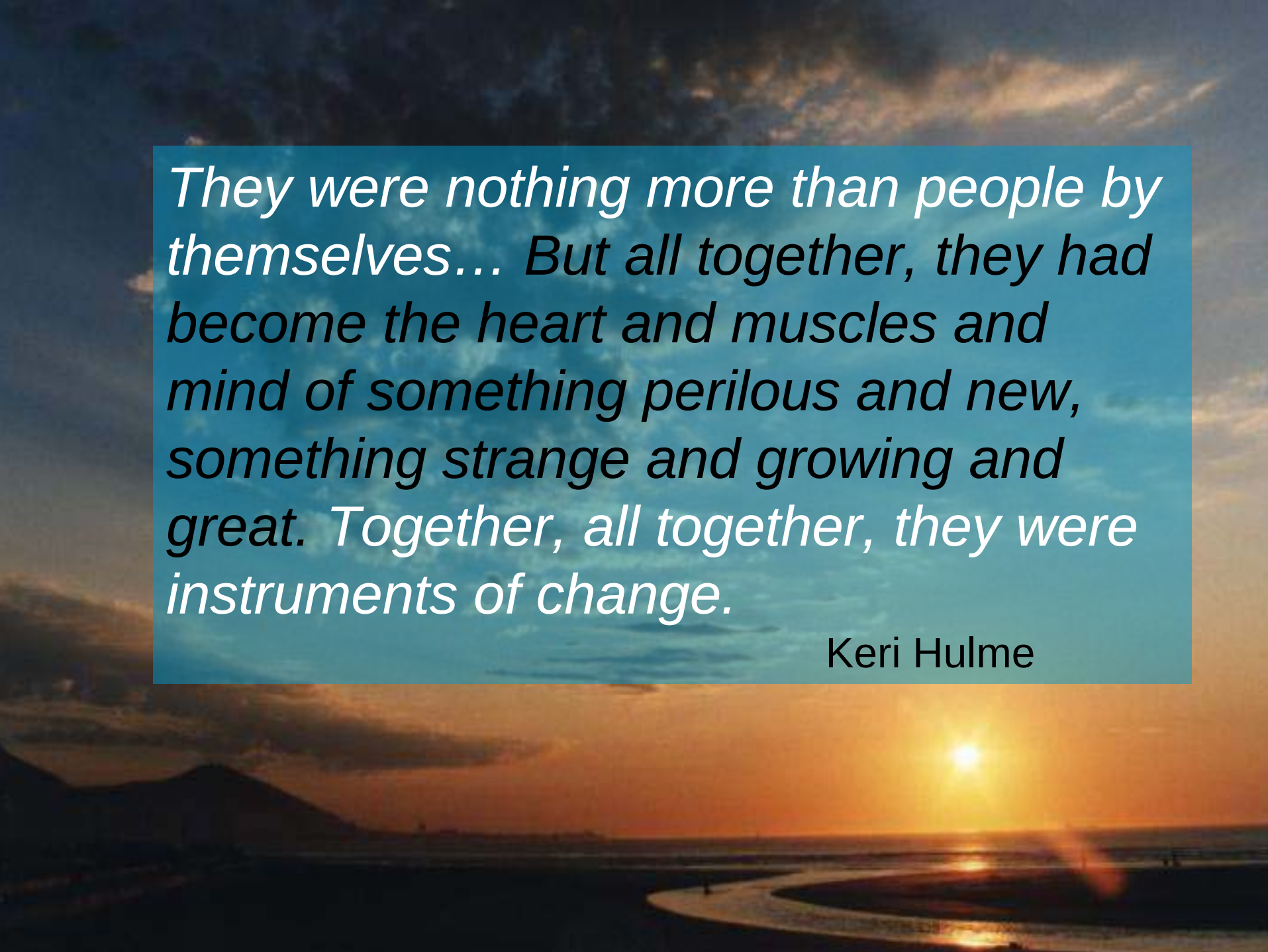
Welcome


They were nothing more than people by themselves… But all together, they had become the heart and muscles and mind of something perilous and new, something strange and growing and great. Together, all together, they were instruments of change.
Keri Hulme

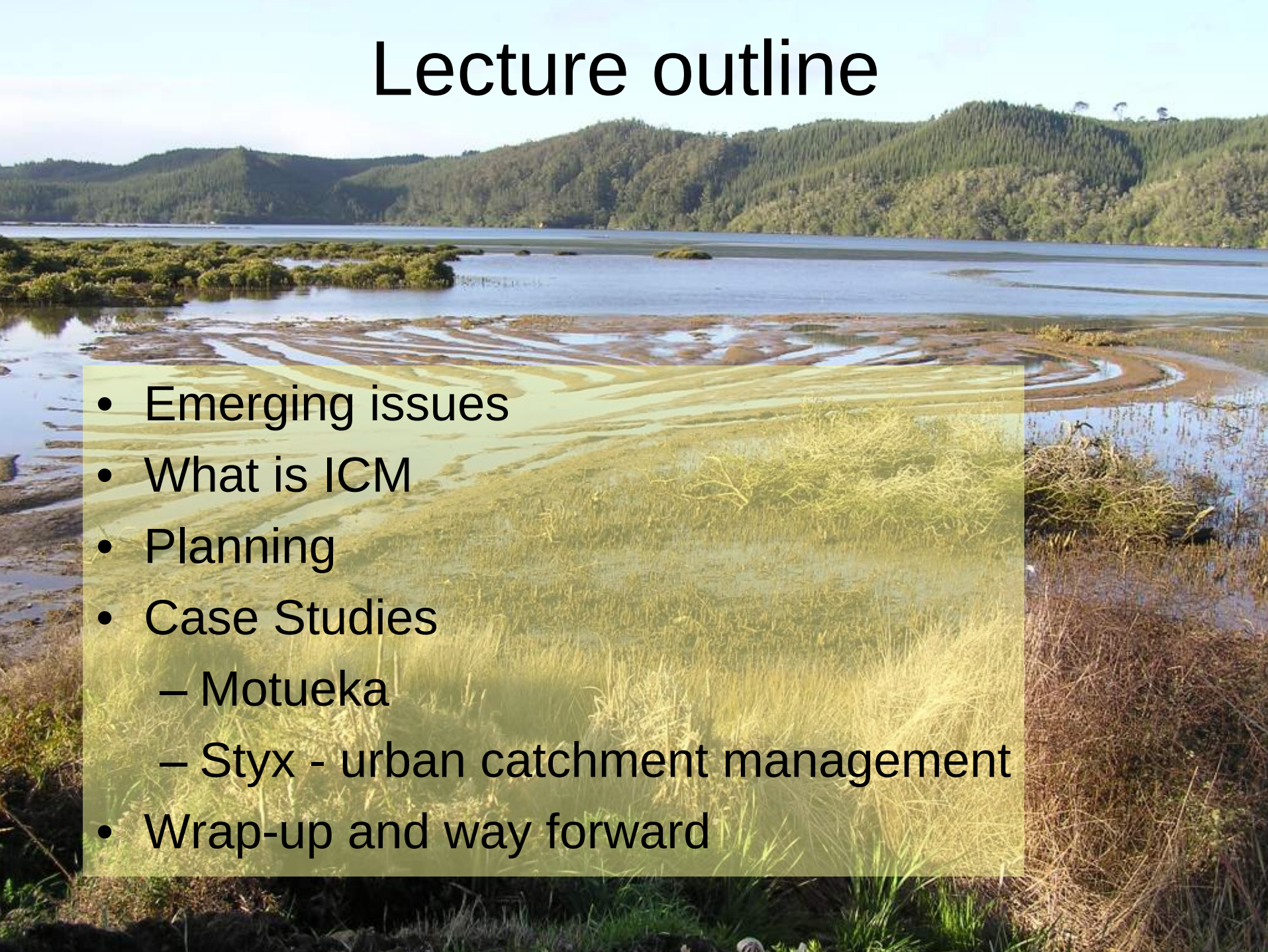
Landcare Research
Manaaki Whenua

ICM meets landscape ecology

Chris Phillips

And bits borrowed from many people including Kevin Connery, Breck Bowden, Andrew Fenemor, Hans Schreier, Christine Heremaia

Lecture outline



- Emerging issues
- What is ICM
- Planning
- Case Studies
  - Motueka
  - Styx - urban catchment management
- Wrap-up and way forward

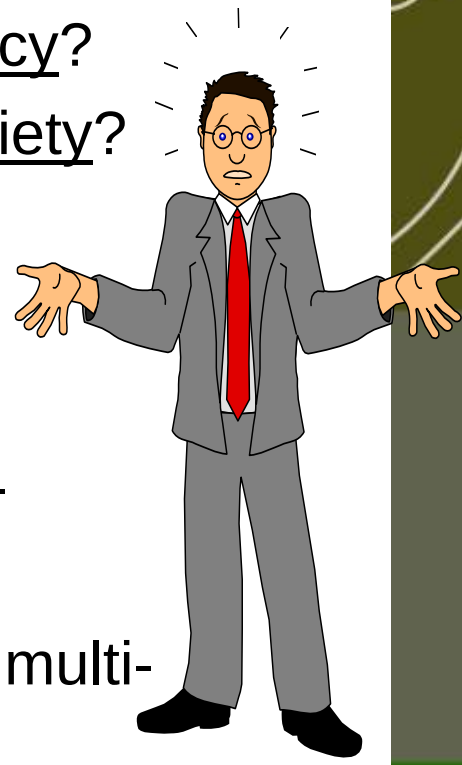
Learning points - reminder

- Big picture
- Wide eyes
- Everything is connected to everything else
- No such thing as a free lunch
- Many names for the same thing
- People make the difference


“One good conversation can shift the direction of change forever”
- Linda Lambert
(Author & founder of Center for Educational Leadership at California State University)

Emerging issues in natural resource management

- How do we bridge the gap between science & policy?
- How do we bridge the gap between science & society?
- How do we make science useful?
- How do we move from inter- to multi- to trans-disciplinarity?
- How do we create science teams to conduct multi- & trans- disciplinary research?
- How do we create science institutions to carry out multi-disciplinary research?



Emerging trends in natural resource management

The social face of catchment management

Learning communities and organisations

Knowledge management

Integrated and inter-disciplinary approaches

The great challenge for the next several decades will be to advance understanding of social systems in the same way that the past century has advanced understanding of the physical world.

Jay Forrester

ICM - definition

Integrated Catchment Management (ICM) is a **process**

through which people can develop a vision, agree on shared values and behaviours, make informed decisions and

act together to manage the natural resources of their catchment.

What is integrated catchment management?

An approach which recognises the catchment or river basin as the appropriate organising unit for research on ecosystem processes for the purpose of managing natural resources in a context that includes social, economic and political considerations.

ICM as a multi- dimensional partnership

…a way of thinking about community" interactions

Greenway/blueway planning process

Common elements of any planning process

- Decisions – vision, partnerships, roles, concensus
- Issues & inventory – boundaries, knowledge, info mgmt
- Objectives – actions, who, how, where, when
- Planning/Design – alternatives, regulations etc
- Implementation
- Monitoring & Evaluation

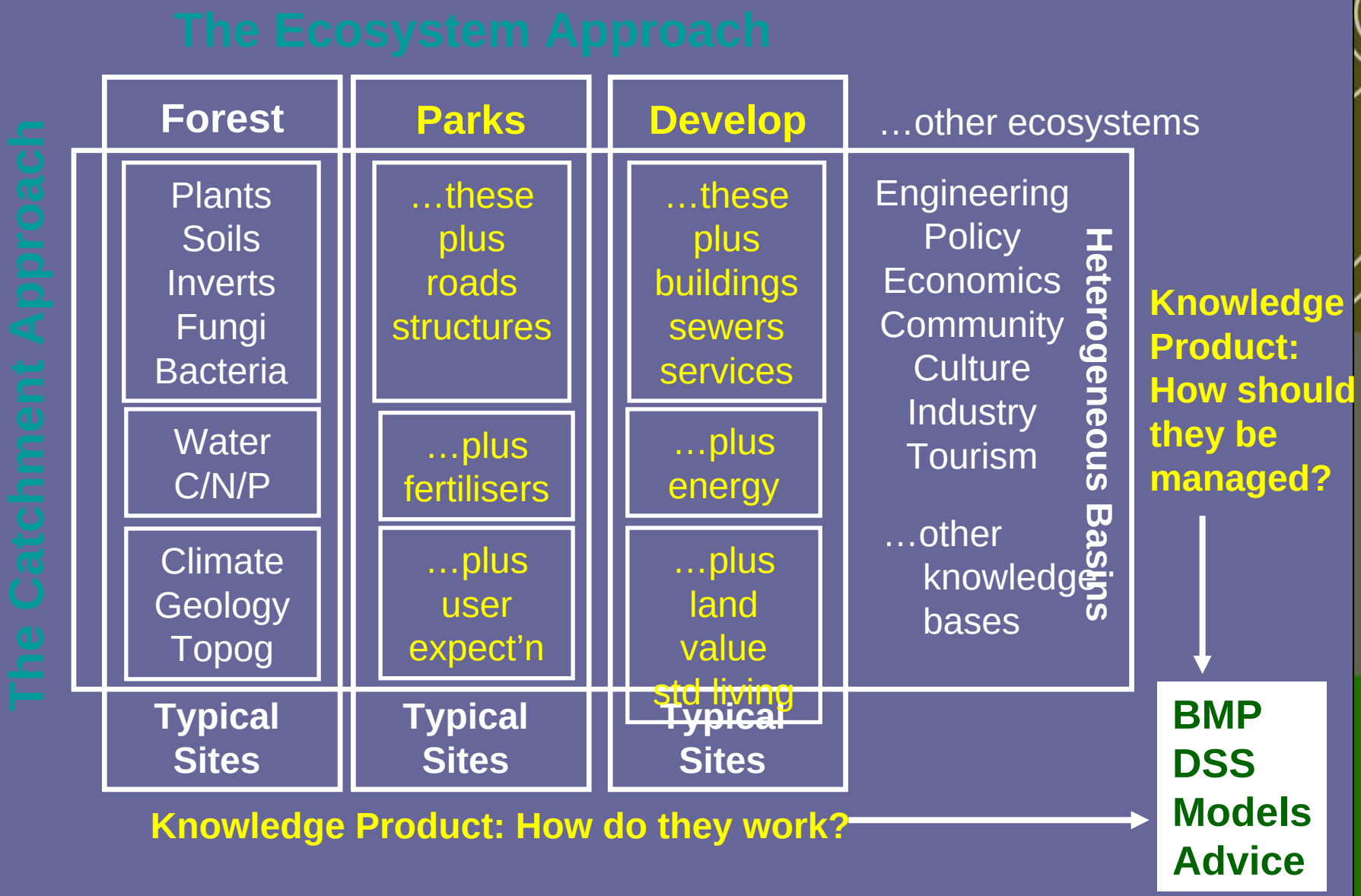
ICM in NZ

- Recent survey (2007) based on IWM Canada
- Definitions, issues, indicators, activities
- Telephone interviews – mgmt down
- Q's - ours and IWM survey (Canada)

Main ICM issues in NZ

- Managing land to improve water quality
- Water quality and allocation demands
- Biosecurity & integ pest control into mgmt plans
- Community concerns about water
- Managing nutrient enriched water ways, etc

Rural Catchments, Urban Catchments…….



Case studies

- Motueka River - rural
- Styx River - urban

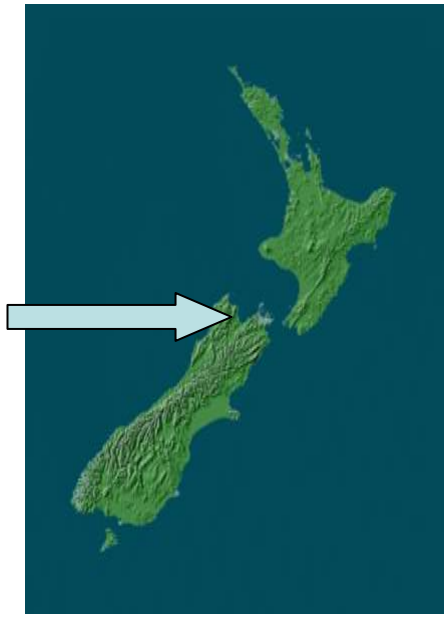
INTEGRATED CATCHMENT MANAGEMENT

for the Motueka River

•ridge tops to the sea•

http://icm.landcareresearch.co.nz/

Where is the Motueka?



Ridge tops to the sea

ICM Motueka Research Programme

http://icm.landcareresearch.co.nz

Goal: undertake research to help improve the management of land, freshwater, and near-coastal environments in catchments with multiple, interacting, and potentially conflicting land and water uses.

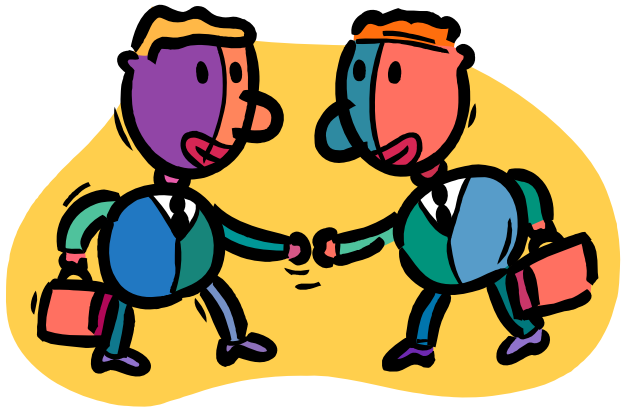
A starting point – my view

Without a common level of understanding of the issues, information and knowledge related to those issues, real change will struggle to occur.

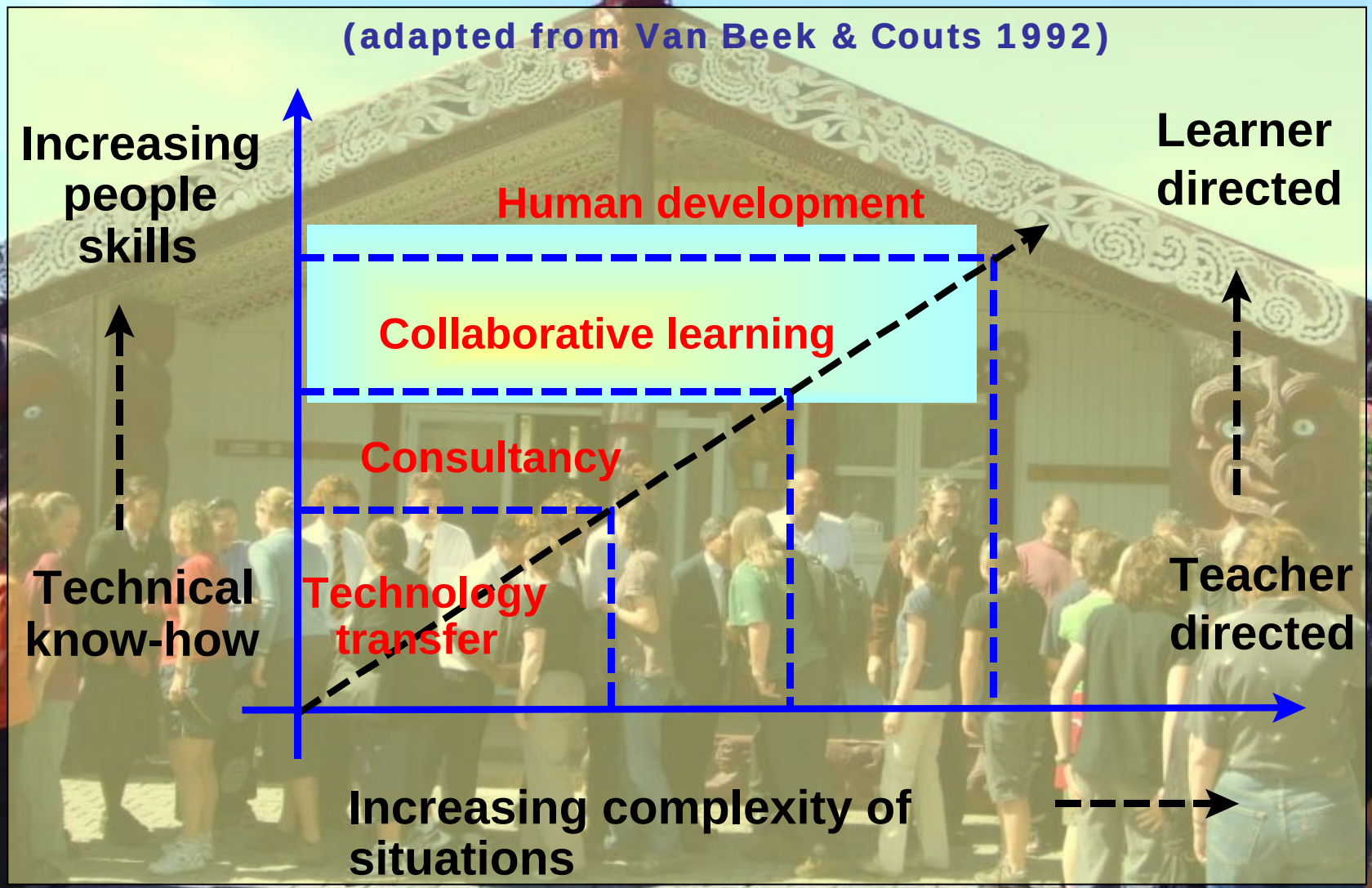
Collaborative or social learning

“Learning that occurs only when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action”.

Exploring social learning in the development of collaborative natural resource management. (Thesis, 2001. Tania Marie Schusler)



Different approaches to developing and sharing information for decision making



Motueka Catchment Issues

- Competition for scare resources
- Influence of forestry on water & sediment
- Use of riparian zones for multiple purposes
- Concern about microbial and nitrogen levels
- Effects of gravel harvesting
- Aquatic biota decline
- Marine intensification
- Cumulative effects
- Urban-rural divide
- Institutions
- ……..

Much the same types of resource management issues you can find in any catchment anywhere in the world!

"keeping a great catchment great"

The Motueka catchment, unlike many others in New Zealand or around the world, is in pretty good shape.

It is not broken, nor are the issues at a critical stage in terms of resource degradation.

A guiding philosophy of the research programme, our stakeholders and the community is thus to keep the catchment in good condition.

This leads to a management philosophy that:

"prevention is better than cure"

Communication/knowledge

Integrated catchment management just doesn't happen.

icm.landcareresearch.co.nz

One of the principles of an ICM approach is the development of a knowledge base for the catchment, i.e. the collection, organisation and dissemination of data, information, and knowledge about the catchment, resource use, issues, and people.

The purpose of the knowledge base is to promote information integration, synthesis, and delivery about integrated catchment management of the Motueka River.

This CD-ROM is but one of a number of ways that knowledge is being promoted.

There is also a web site, a technical report, an annual general meeting, and many other avenues for engaging in knowledge delivery and transfer between the many actors in the catchment.

Story – Sherry River

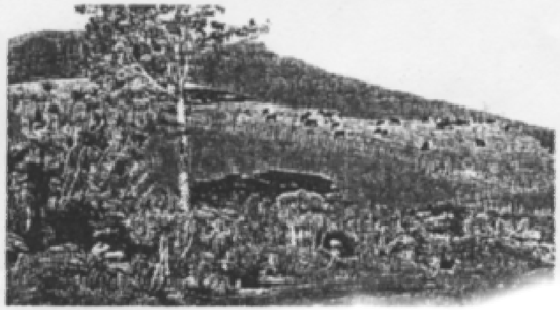
Bridge over troubled waters

Farmers and scientists join up to sweeten the Sherry River

While farmers are frequently criticised for the effects of dairying on the environment, positive developments are often ignored. **Simon Towle** reports on work along the Sherry River in Tasman District, where farmers have joined forces with scientists and the district council.

Dairy farmers have traditionally locked horns both with local councils and Fish and Game New Zealand for contaminating the country's natural waterways. However, compelling science has now persuaded farmers in Tasman District to invest considerable effort and money to clean up the Sherry River in a case that could prove a model example for the rest of the country.

Even long-time dirty-dairying campaigner Bryce Johnson, director of Fish and Game, enthusiastically describes the project as "a good news sto[...] and the envi-

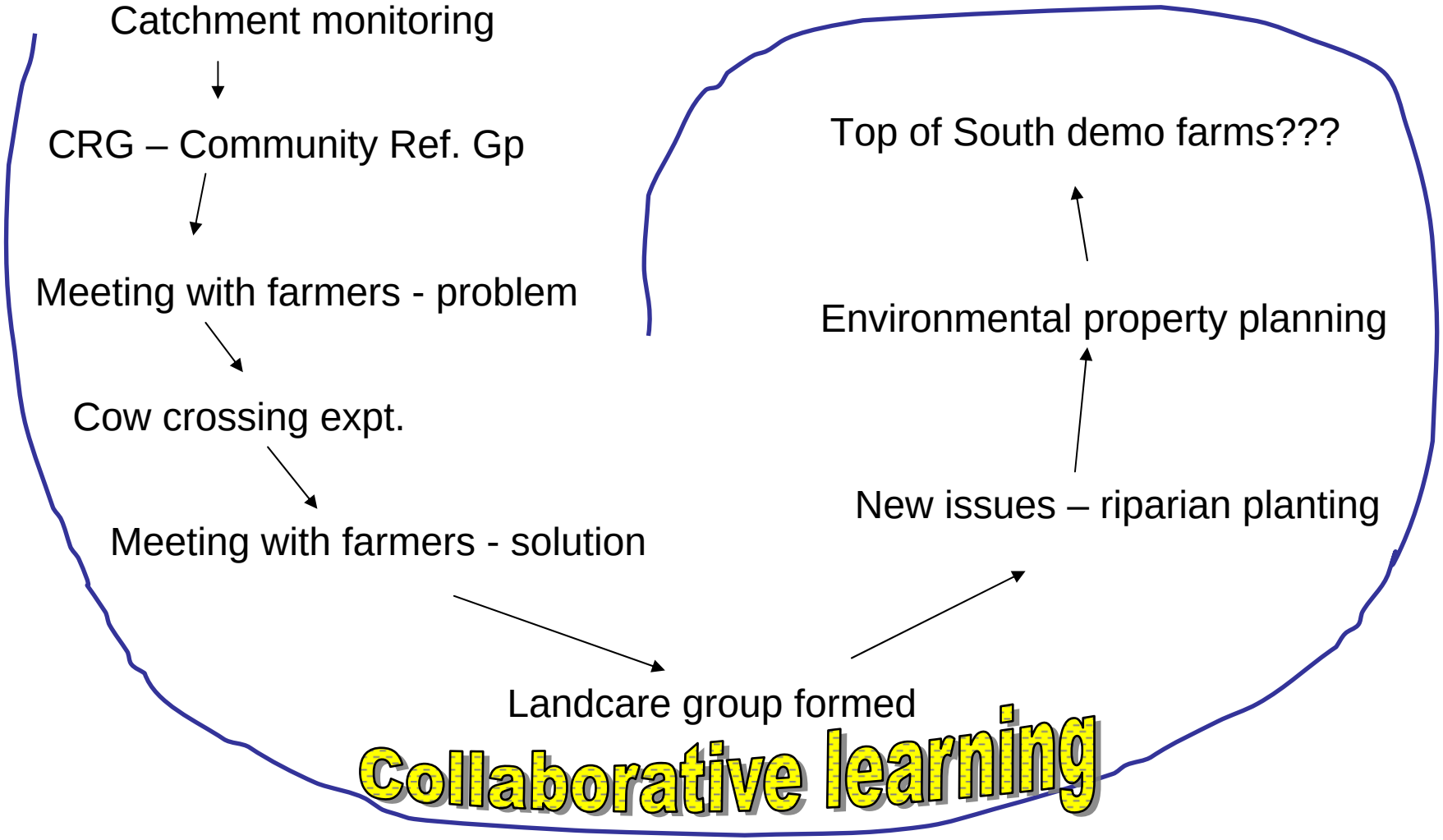


new information in December 2001, "the Sherry farmers undertook to take action. In a short period of time, the crossing on Frank and Lisa White's property where the exper[...]iment was carried out has now been brid[...] In addition, another farmer, Rod O'[...] is using a bridge instead of taking [...] through the river."

He says two other bridges ar[...] ning stages and substantial f[...] ing to keep stock out [...]

Tasman District [...] cial assistance [...]

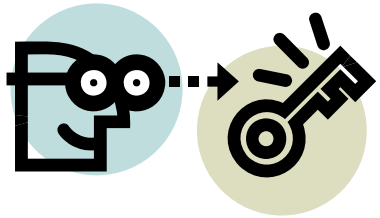
How did it happen?



Sherry River Catchment Group

‘Improving Water Quality through on farm actions’

Successes



- understanding of biophysical processes
  - (i.e.,what's there and how it works)
- role of social science
  - on-going facilitation and keeping us on the pathway
- understanding of integration
- multi-pronged communication
- linking science with catchment players
- building trust & building relationships
  - 'walking alongside' others on the journey
- breaking down institutional barriers

Styx

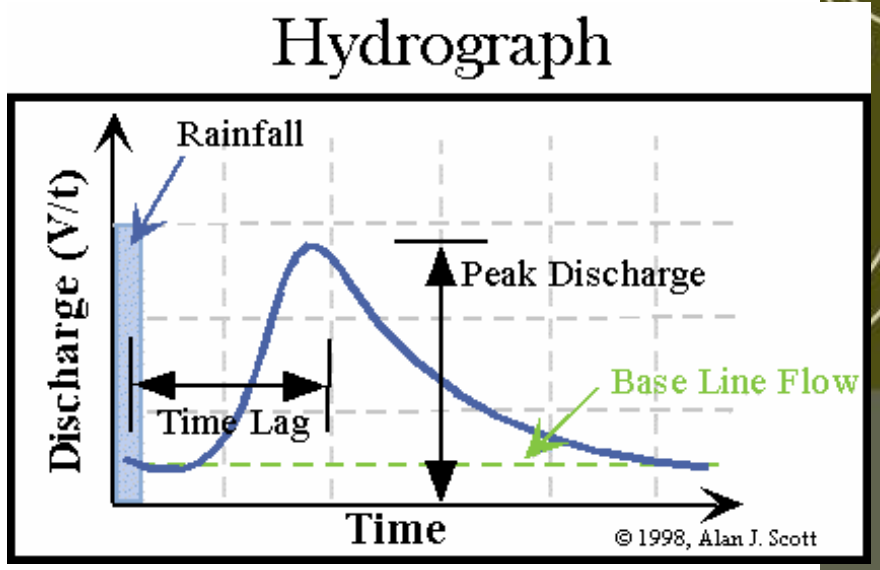

Major Driver - Land Use Change
Increasing pressure for residential development as the city expands.
Northwood

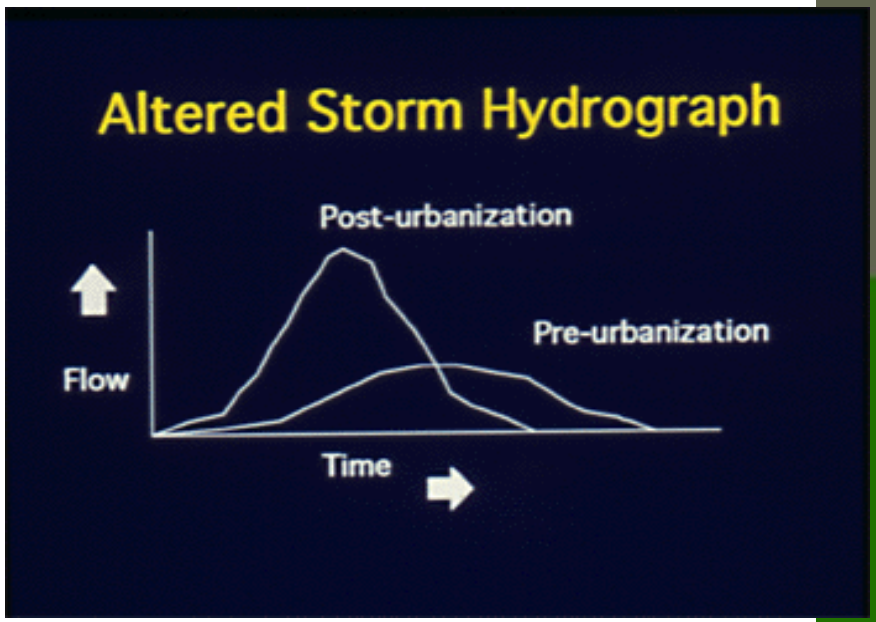
Environmental Impacts of Urbanisation

- Water Quantity
- Stream Channel Morphology
- Water Quality
- Aquatic & Riparian Habitat
- Socioeconomic effects

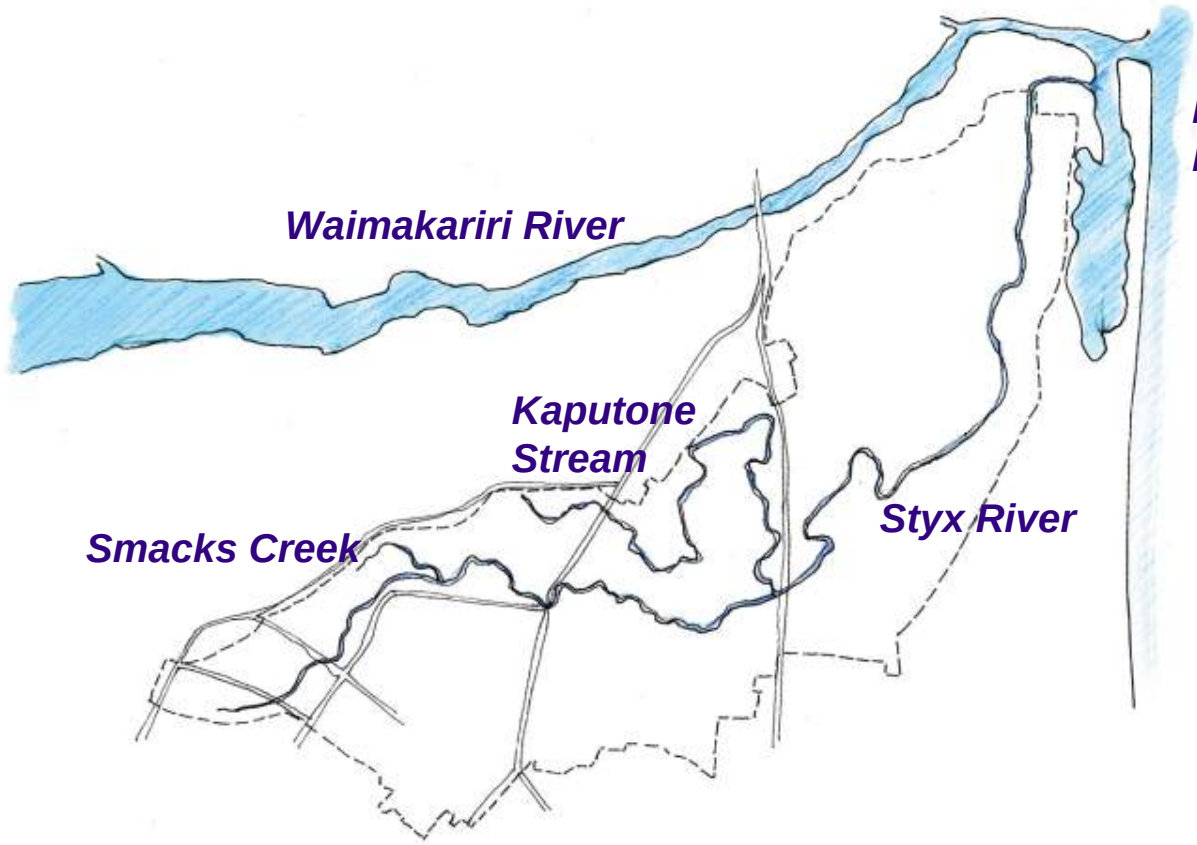
Water Quantity

- Impervious cover
- Hydrograph
- Time of Concentration
- Base flow
- Increased Flashiness
- Stream Profile Changes
- Bed Scouring & Erosion





Styx River



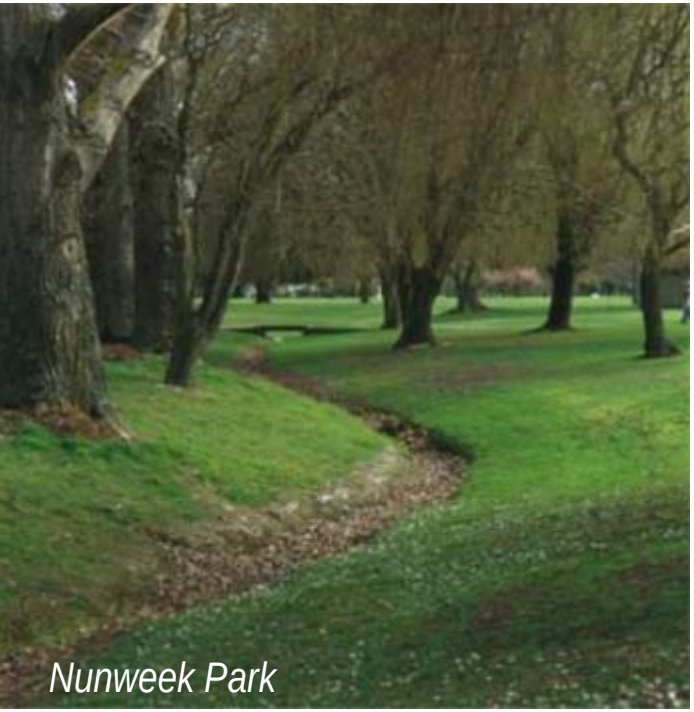
River Length ***Styx River 23.8 km, Kaputone Stream 10.8 km, Smacks Creek 2.1 km plus a number of smaller natural and artificial waterways***

Catchment Area ***Approximately 50 square km***

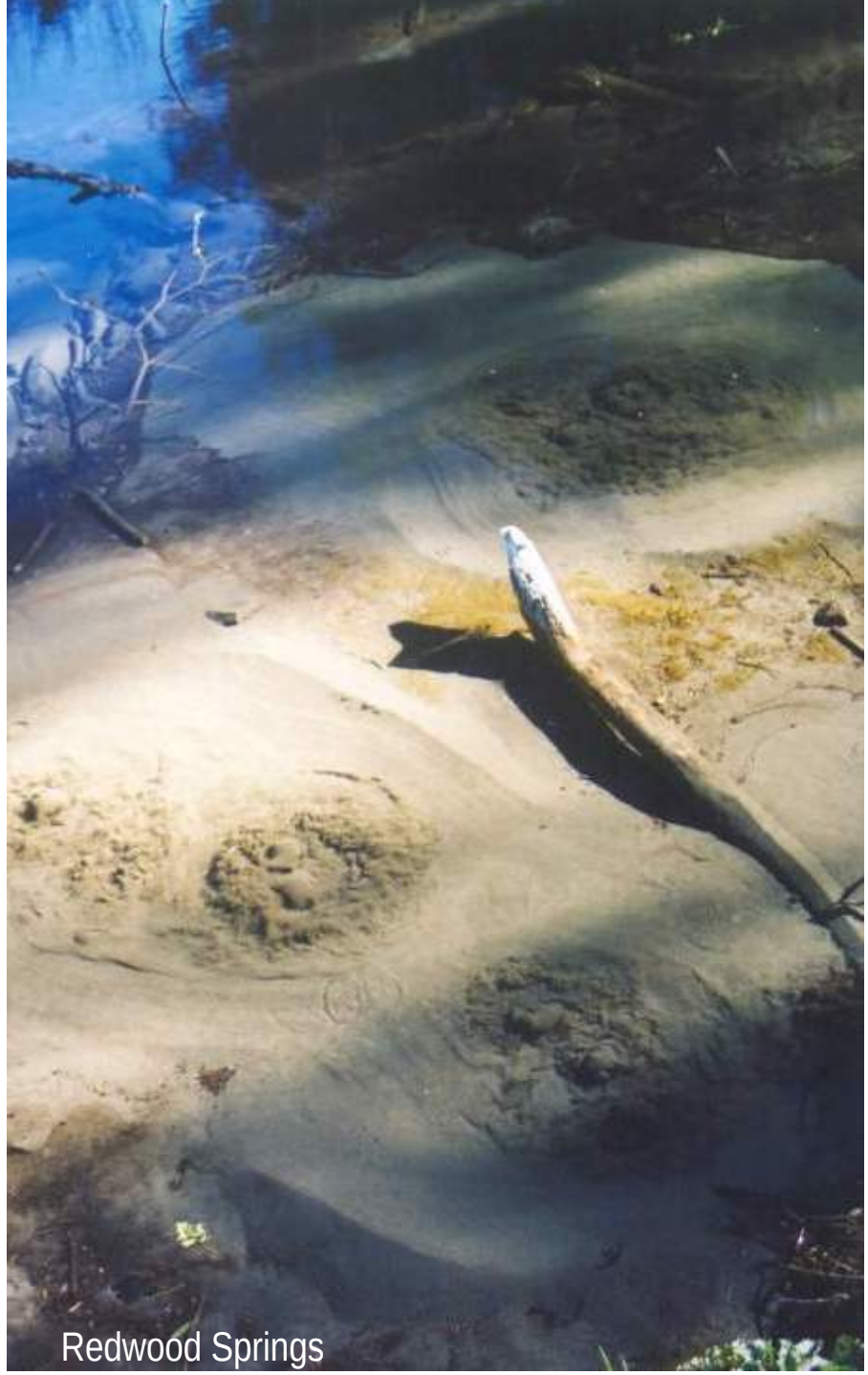
Drainage links to the following wetlands:

Bottle Lake, Marshlands, Cranford Street Basin, Cavendish Road wetland, Belfast wetlands

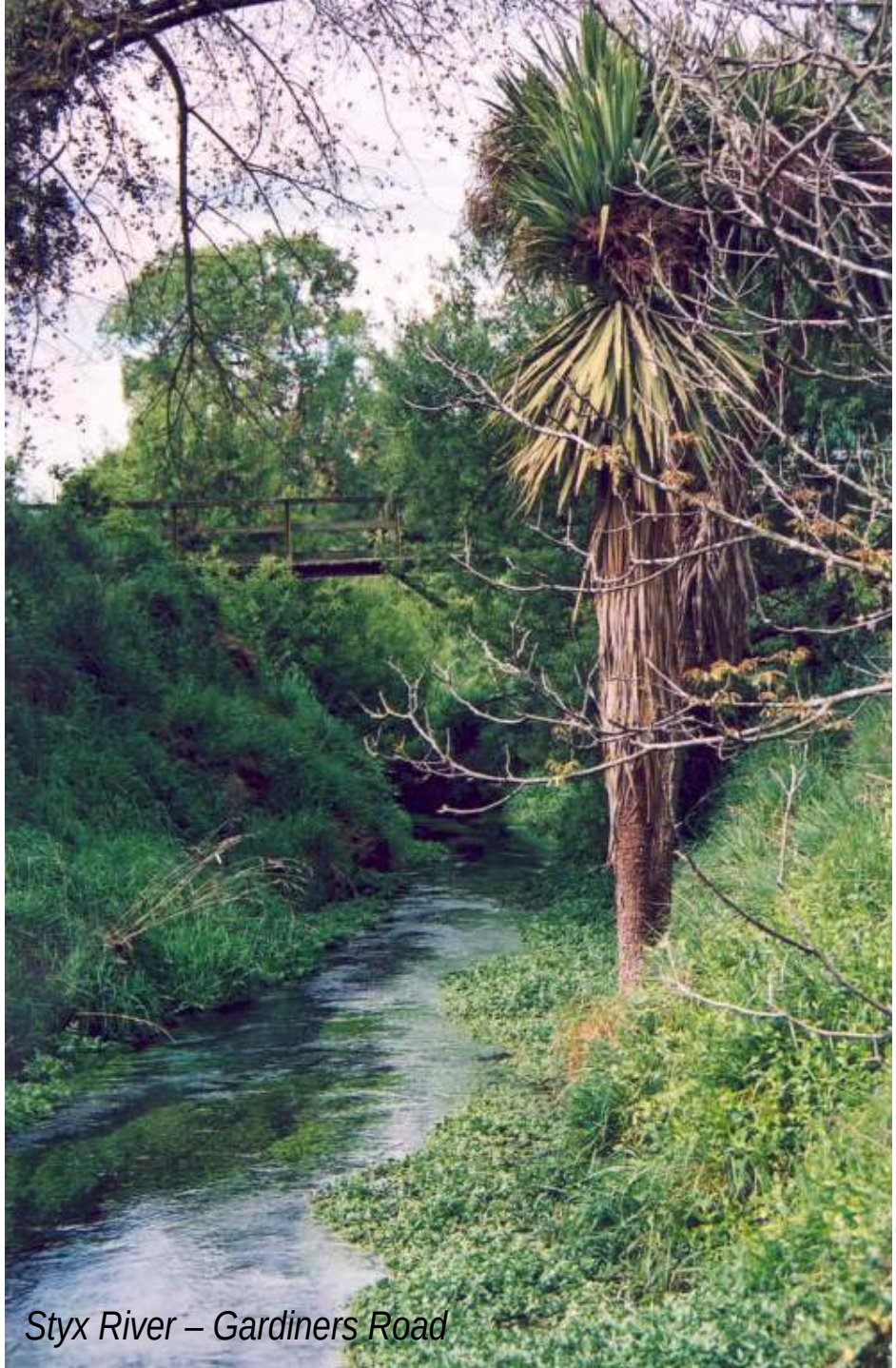
source



Nunweek Park



Redwood Springs



Styx River – Gardiners Road

Styx gorge

Styx Mill Basin

Janet Stewart Reserve

middle reaches

the mouth

Brooklands Lagoon

The Process - involving the community & orgs

Styx River Happening – March 1999

- started during 1999
- extensive consultation and participation
- Involved wide range of people and orgs
- on-going evolving process

Styx Vision 2000 - 2040

1. Viable Springfed River Ecosystem
2. Source to Sea Experience
3. Living Laboratory
4. The Styx as a Place to Be- cultural development
5. Partnerships

Key Concepts

- Values
- Long term costs and benefits
- Visions
- Partnerships
- Holistic integrated management
- Recognising the impact of past adverse affects remedying them in a way that provides multiple benefit

Communication is key!

Newsletters

Web site
http://www.thestyx.co.nz/

styx
newsletter

February 2001

Welcome to this edition of the Styx Newsletter.

2001 is going to be a important year for the Styx River. As you will see from the lead article, the 40 year Vision document for this area was released just prior to Christmas. Your comments on this community plan are now being requested. If you haven't seen this document please do get one as your ideas are important, both for the future of the River and all creatures living within its environs. Enjoy your reading.

Vision for the Styx
Community Planning for the Future

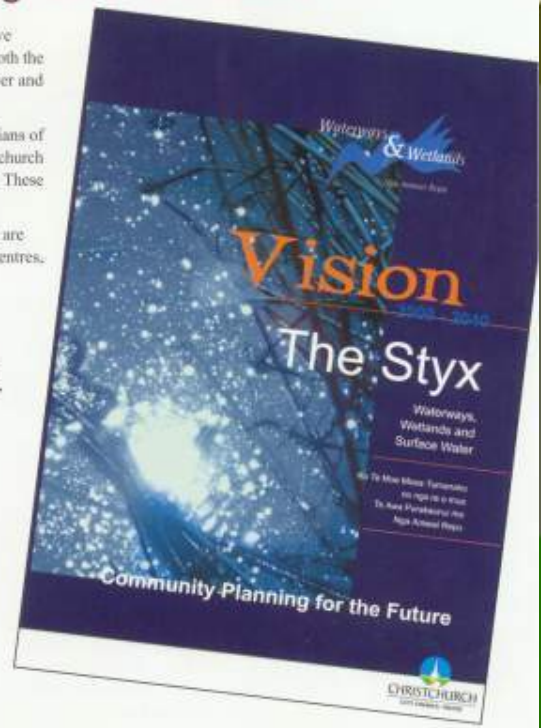
This book is the result of more than two years of extensive community consultation and participation. It highlights both the concerns and the opportunities presented by the Styx River and its environs.

From issues raised by individuals, groups (e.g. the Guardians of the Styx), Tangata Whenua, Community Boards and Christchurch City Council, a series of interrelated visions have evolved. These issues and visions are outlined in this book.

If you have not received a copy and would like one, they are readily available free of charge from Libraries, Service Centres, or by phoning Tracy on 371 1319.

Your comments and support are being sought, along with suggestions as to how you might like to be involved.

The closing date for comment is 28 February 2001.



Dennis Hills, Shirley Papanui Deputy Chairperson and Local Member of Parliament, Clayton Cosgrove reviewing the plan.

A vision is an informed bridge from the present to a preferred future

Planting Days and Fun Events

Community-based Water Quality Monitoring - Smacks Creek

A Partnership Approach

- Guardians of the Styx
- Waterwatch
- Living Laboratory Trust

Objectives: To Identify

- Structures and processes for success
- Obstacles to the programme

International Centre for Nature Conservation
Waterwatch


Wrap up time

Changing Course

What have we been doing?	What should we be doing?
Traditional Approach	Innovative Approach
Creating Impervious Surfaces	Minimizing Impervious Surfaces
Minimizing Buffer Zones	Maximizing Buffer Zones
Draining Wetlands	Creating Wetlands
Stormwater Piping	Detaining Stormwater
End of Pipe Treatment	Source Control
Point Source Pollution	Focus on Non-Point Source Pollution
Expanding Water Supplies	Controlling Demand (Water Smart)
Dealing with Single Pollutants	Cumulative Effects
Dealing with Single Wells & Supplies	Using a Watershed Framework
Creating Dams and Reservoirs	Demolishing Old Dams
Flood Irrigation	Innovative Irrigation

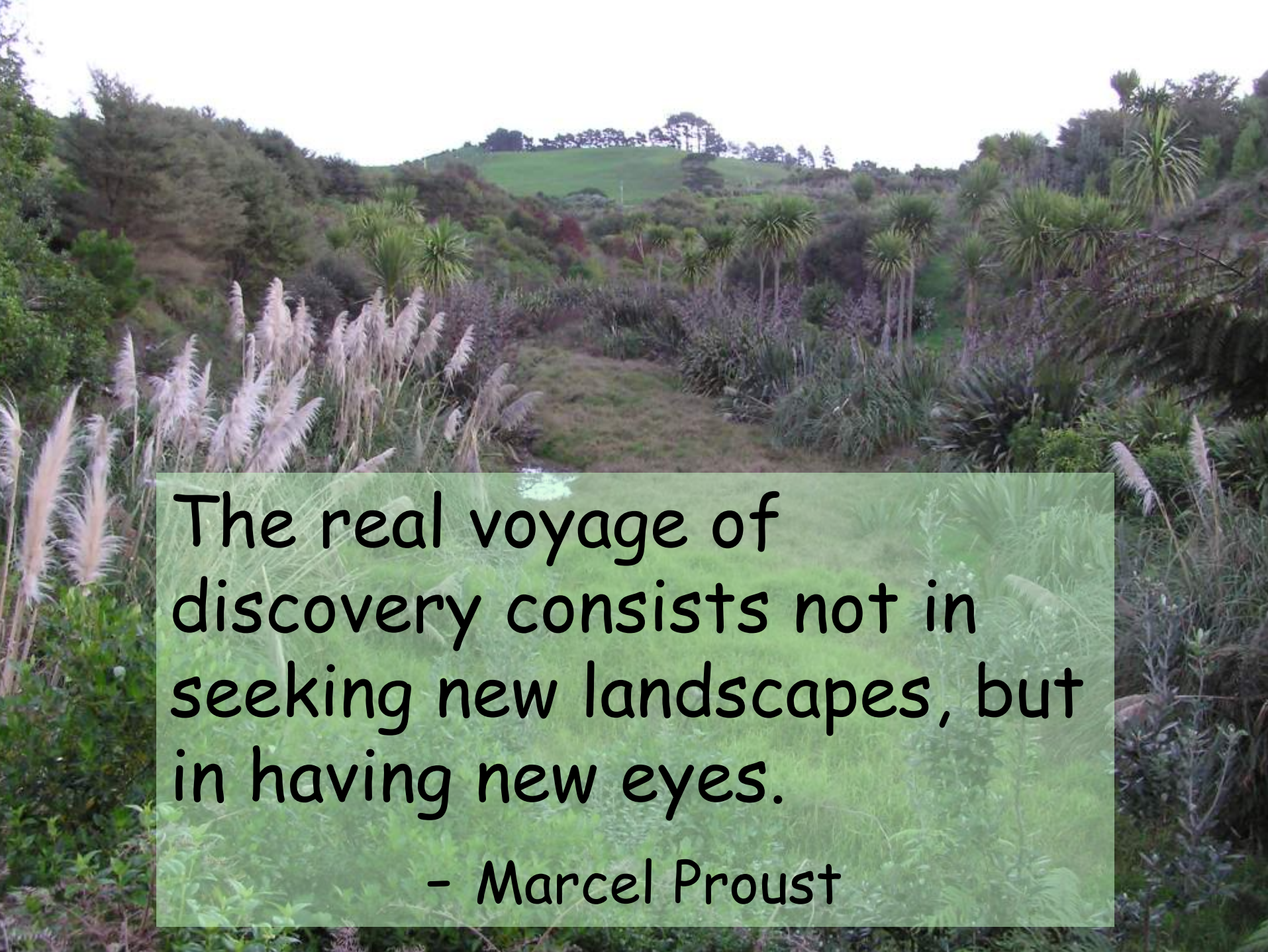
Summary – case studies

- Involvement of stakeholders
- Scoping the issues
- Knowing what we know, knowing who knows what, knowing what's going on = KM
- Plan of action
- Implementation, monitoring & evaluation
- Always with big picture in mind
- Always aware of the connections

Key messages

- Innovative approach but not rocket science
- Inter- (multi-) (trans-) disciplinary – big melting pot
- Partnerships, trust, relationships
- Stakeholders
- Issues analysis
- Goal setting
- Takes time – longer than most realise
- Dialogue is important – F2F and technology

In the end it's all about people!


The real voyage of discovery consists not in seeking new landscapes, but in having new eyes.
- Marcel Proust