RESTORATION PLANNING

Murray Williams
Adapted & presented by Colin Meurk
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- Achieving what you want
- Avoiding ‘relitigation’
- Professional approach for funding and recruitment
Restoration’s Planning Trio

- Restoration Plan
  - concept & design
- Work Plan & Budget
  - implementation
- Monitoring Plan
  - progress
Restoration’s Planning Trio

• Restoration Plan
  – vision
  – goals
  – design
  – objectives (milestones)
  – actions (milestones)
Restoration’s Planning Trio

• **Work Plan & Budget**
  – what will be done
    (goals/design/objectives)
  – when it will be done
    (objectives/actions/methods)
  – how much effort will it take
  – & what will it cost?
    (work plan & budget)
Restoration’s Planning Trio

- **Monitoring Plan**
  
  James Griffiths/Peter Handford/Mike Joy
  
  for each “objective” or milestone
  
  - record outcome of each action
  
  - identify information to be collected (indicators)
  
  - reporting requirements
  
  - informs subsequent actions (adaptive management)
New Zealand Biodiversity Recording Network

Online nature recording system

Choose a portal from above

www.nzbrn.org.nz
New Zealand Biodiversity Recording Network: Find or create location - Windows Internet Explorer

Google map

Selecting an existing site

- Pen and zoom map to desired location (wheel mouse zooms in or out)
- As you zoom in common sites will appear as red markers
- Hover cursor over a marker to get name of that site
- Click on marker to show site info window
- To use site click the ‘Use this site’ button in the info window

Creating a new site

- Pen and zoom map to desired location (wheel mouse zooms in or out)
- To create a site click on map (a blue marker will appear)
- Enter address or name of a site, OR
- Enter a grid reference (NZMG or NZTM). Be sure to select appropriate radio.
- Click on marker to show site info window
- When you find your site then click the ‘Save as new site’ button in the info window

Existing sites will appear at zoom settings 18 and above. Use slider bar on left, or wheel on mouse to zoom in/out. Common sites use blue markers, locations by address/gridref use green. If located in your personal sites use red.

E: 1179841 N: 4940525
Region: Southland
District: Southland District
Ecological district: Te Anau

New site name
Manapouri Edith's place

Save my location as...
- Name & Coordinates
- Coordinates only

Save as new site

Works best in Internet Explorer. If you are using FireFox then only the second click on the map will produce a marker.
Your choice: All species in **October** year: **2007**

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• Restoration Plan
  – vision
  – goals (& design)
  – objectives (& design)
  – actions (& design)
• Restoration Plan

The dream

- vision
- goals & design

The doing

- objectives
- actions
• Restoration Plan

[The dream]
- vision
- goals
- objectives
- actions

[The thought]
- Evaluation
- Feasibility
Restoration Plan

• vision

- inspirational
- aspirational
- “reference”
- a high level statement of desire
- captures the mauri (essence or life force)
- short and snappy
Restoration Plan

• **vision**
  - inspirational
  - aspirational
  - “reference”
  - a high level statement of desire
  - short and snappy

The vision statement is…… your marketing tool
…… your reception desk
Examples:

- A thriving forest ecosystem supporting a full complement of the region’s wildlife and natural systems
• A thriving forest ecosystem supporting a full complement of the region’s wildlife and natural systems

• Bringing back a dawn chorus (Nga Uruora Kapiti)
• A thriving forest ecosystem supporting a full complement of the region’s wildlife and natural systems

• Bringing back a dawn chorus (Nga Uruora Kapiti)

• To redress the balance over a small but significant ecosystem which may act as an incentive to others to do likewise. (Glenfern Sanctuary, Gt Barrier Is.)
• A healthy, self-sustaining ecosystem, free of all introduced mammals and comprising indigenous species that are appropriate to the Orokonui site, where people can enjoy a peaceful encounter with nature, and from which they may take recreation, refreshment, new knowledge, new skills and a new commitment to conservation.
• To facilitate the restoration of indigenous vegetation and fauna on Otamahua/Quail Island and provide refuge for locally extinct, or rare and endangered species of the Banks Peninsula region;
• to recognise, protect and enhance the natural values and the landscape character of the island;
• to recognise historical sites and respect historic values of relevance both to the tangata whenua of Whakaraupō and to non-Maori;
• to encourage public understanding, awareness and care of the island and its historic, cultural and natural values, and to foster interest in the restoration project through publicity and education;
• to recognise and accommodate public use of the island;
• to encourage relevant research on the natural features and cultural history of the island;
• through a partnership between the tangata whenua, Department of Conservation and the Trust to achieve each of the above and assist in the management of the island.
“It is a wonderful experience to listen to the dawn chorus on a pest free island, and it is a sobering thought to realize that this glorious cacophony of sound happened every morning, the length and breadth of New Zealand’s mainland for thousands upon thousands of years. Fortunately many species survived on our mammal-free islands and it is possible, with careful management, to re-establish populations of native animals now in serious decline or long since gone from the mainland. Promoting the development of healthy forest habitats will once again see the forest full of mature fruiting trees. A child’s diary entry after a visit to Bream Head in 2015 might read… “Dawn was a chorus of bellbirds. Throughout the day I saw lots of lizards scuttling away and saddlebacks playing in the trees. At dusk there were flocks of kaka screeching overhead followed by seabirds coming in to land and kiwi calling at night. It was awesome!”

The Bream Head Conservation Trust aims to achieve this vision.
Restoration Plan

• vision
  - inspirational
  - aspirational
  - “reference”
  - a high level statement of desire
  - short and snappy

The vision statement is ...... your marketing tool
 ........ your reception desk
 ........ your shop window
This is what I have, and I know what I want to have……

........so where to now?
This way forward!
Restoration Plan

- vision

Site Assessment

What’s there to work with?  What’s stopping progress now?
Existing resources  Threats

- goal

Evaluation

Restoration Plan
- vision
- goals
- objectives
- actions

Feasibility
Site Assessment/Evaluation

- What are the existing resources & those required.
- A SWOT (strengths, weaknesses, opportunities, threats) analysis
- Ensure you have researched tenure, land/reserve status, community consultation, iwi liaison (these contacts may yield allies to the cause) - & that site & future is secure.
- Local Govt plans that may affect site – roads, services, etc
- Inventory of any remnant native vegetation on site or adjacent
- Biosecurity/pest risks
- Use of benign exotic species as nurseries
- Mapping of main land units which may become restoration units
Restoration Plan

- vision

What evidence supports your ideas?

What could constrain your ideas?

Predictability of outcome?

Feasibility

Restoration Plan
- vision
- goals
- objectives
- actions
Restoration Plan

• design (at 2 scales)
  - prior to goals – spatial representation & configuration of vision
  - site specific design related to objectives & actions
Restoration Plan

• goals
  - high level operational intent
  - fixed for life of plan
Vision:

A coastal escarpment swathed solely in indigenous vegetation and replete with avian melody

Goals:

Remove

Protect: Eliminate all plants not native to the escarpment

Protect: Eliminate & exclude browsing & predatory animals

Enhance: Reintroduce plants & animals native to the escarpment

Share: Establish tracks to assist public access & enjoyment of views

Protect – remnant original habitat patches
How the restoration plan fits into the Maungatautari project

**Vision**
- Restore the diversity, vitality and resilience of the ecosystems of Maungatautari

**Goals**
- Educational/recreational plan
  - Management Plan
- Restore the forest
  - Complete fence
  - Appoint project manager for pest control
  - Pre-operation monitoring on mountain
  - Operation plans for pest control developed
  - Carry out pest control
- Restore the wildlife
  - Appoint person to manage wildlife
  - Workplans for each species
  - Secure funding and approval for translocations
  - Make wildlife introductions
- Restore waterways
  - Plant riparian zones
  - Monitor water quality
- Forest ecosystem is self sustainable
  - Appoint monitoring co-ordinator
  - Monitor forest condition and wildlife
- Connections to landscape
  - Locals plant riparian zones and corridors on surrounding land
Restoration Plan

- objectives
  - A statement of time-dependent performance
  - What will be done by when
    (these may also be regarded as broad milestones)
Restoration Plan

- actions
  - methods/design
e.g. plant Planning Unit ‘A’ in spring 2011 with species palette (‘a’)
Example:

**Vision**: a coastal escarpment swathed solely in indigenous vegetation and replete with avian melody

**Goal 1**: to eliminate and permanently exclude browsing & predatory mammals from the escarpment

**Goal 2**: to remove all plants not native to the escarpment

**Goal 3**: to reintroduce plants and animals native to the escarpment

**Objective 1**: by 2007, to have no farm stock present in, or able to access, the restoration site;

- **Action 1**: erect 7-wire fence along eastern and southern boundaries of reserve
- **Action 2**: Round up and drive stock from reserve
- **Action 3**: Repair existing northern and roadside wire fences

**Objective 2**: by 2007, to have reduced possum abundance to < 2% RTC.

- **Action 1**: establish permanent baiting grid, bait stations at ~300m intervals
- **Action 2**: service bait stations

**Method(s)?**
How the restoration plan fits into the Maungatautari project

**Vision:**
- Restore the diversity, vitality and resilience of the ecosystems of Maungatautari

**Goals:**
- Educational/recreational plan
- Management Plan
- Restoration Plan

**Objectives:**
- Restore the forest
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- Forest ecosystem is self-sustainable
  - Appoint monitoring co-ordinator
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- Connections to landscape
  - Locals plant riparian zones and corridors on surrounding land
**Remove ...**

**Underpinned by design**

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<thead>
<tr>
<th>Goals</th>
<th>Objectives: what to do by when</th>
<th>How we’ll do it (Actions/Tasks)</th>
<th>When to do</th>
<th>How much effort and cost?</th>
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<tr>
<td>1. (Protect)</td>
<td>By 2007, to have no farm stock present in, or able to access the restoration site</td>
<td>Erect a 7-wire fence along eastern and southern boundaries</td>
<td>Drive stock out of reserve</td>
<td>Establish bait station grid</td>
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<td>2. (Enhance)</td>
<td>By 2007, to have possum and rat abundance reduced to &lt; 2% residual trap catch</td>
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<td>3. (Share)</td>
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**An alternative format for summarising goals, objectives and actions of a restoration plan**

**Template for a Restoration Plan**
Restoration’s Planning Trio

- **Work Plan & Budget**
  - what will be done
    (design/goal)
  - when will it be done
    (objective -> action/method)
  - how much effort will it take
  - what will it cost
    (work plan & budget)
Restoration’s Planning Trio

• Work Plan & Budget
  - what will be done
  - when it will be done
  - how much effort will it take
  - what will it cost
**Work Schedule**

**...is a tabulation of task/action against time**

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4 1</td>
<td></td>
</tr>
<tr>
<td>Bait station</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Nursery</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Fencing</td>
<td>X X X</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>Bird counts</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
• Time Schedule........
....is an allocation of effort against task

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3</td>
<td>1 2 3 4</td>
<td>1</td>
</tr>
<tr>
<td>Bait station</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Nursery</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Fencing</td>
<td>40 40 40</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Bird counts</td>
<td>32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cost Schedule

...is an allocation of $\$\$ against task

<table>
<thead>
<tr>
<th>Task</th>
<th>Hrs</th>
<th>$/hr</th>
<th>Labour</th>
<th>Materials</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bait station</td>
<td>48</td>
<td>15</td>
<td>720</td>
<td>1200</td>
<td>1920</td>
</tr>
<tr>
<td>Nursery</td>
<td>96</td>
<td>12.50</td>
<td>1200</td>
<td>4100</td>
<td>5300</td>
</tr>
<tr>
<td>Fencing</td>
<td>120</td>
<td>36</td>
<td>4320</td>
<td>4000</td>
<td>8320</td>
</tr>
<tr>
<td>Bird counts</td>
<td>126</td>
<td>12.50</td>
<td>1575</td>
<td>600</td>
<td>2175</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$17715</td>
</tr>
</tbody>
</table>
• Budget ..........

...is a summary of how finance is distributed within the restoration project as a whole

- Single year
- Multi-year

Usually laid out as a 3-part table
## Income

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income (x $ 000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donations / grants</td>
<td>20.0</td>
<td>35.0</td>
<td>50.0</td>
<td>40.0</td>
</tr>
<tr>
<td>Membership</td>
<td>10.0</td>
<td>15.0</td>
<td>25.5</td>
<td>30.0</td>
</tr>
<tr>
<td>Sales</td>
<td>4.5</td>
<td>5.0</td>
<td>7.5</td>
<td>12.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>34.5</td>
<td>55.0</td>
<td>83.0</td>
<td>82.0</td>
</tr>
</tbody>
</table>
## Expenditure

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expenditure (x $ 000)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td>1.3</td>
<td>1.4</td>
<td>1.5</td>
<td>1.7</td>
</tr>
<tr>
<td>Staff salary costs</td>
<td>10.3</td>
<td>11.5</td>
<td>12.5</td>
<td>15.7</td>
</tr>
<tr>
<td>Operational costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- rental</td>
<td>3.8</td>
<td>4.0</td>
<td>4.3</td>
<td>4.5</td>
</tr>
<tr>
<td>- maintenance</td>
<td>5.2</td>
<td>5.8</td>
<td>16.4</td>
<td>5.9</td>
</tr>
<tr>
<td>- projects</td>
<td>25.7</td>
<td>26.7</td>
<td>28.7</td>
<td>31.5</td>
</tr>
<tr>
<td>Capital purchases</td>
<td>-</td>
<td>-</td>
<td>31.5</td>
<td>6.8</td>
</tr>
<tr>
<td>ACC levies</td>
<td>2.2</td>
<td>2.2</td>
<td>2.4</td>
<td>3.1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>48.5</td>
<td>51.6</td>
<td>97.3</td>
<td>69.2</td>
</tr>
</tbody>
</table>
# Balance (x $000)

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>34.5</td>
<td>55.0</td>
<td>83.0</td>
<td>82.0</td>
</tr>
<tr>
<td>Expenditure</td>
<td>48.5</td>
<td>51.6</td>
<td>97.3</td>
<td>69.2</td>
</tr>
<tr>
<td>Surplus(deficit)</td>
<td>(14.0)</td>
<td>3.4</td>
<td>(14.3)</td>
<td>12.8</td>
</tr>
<tr>
<td>Balance (cumulative)</td>
<td>(14.0)</td>
<td>(10.6)</td>
<td>(24.9)</td>
<td>(12.1)</td>
</tr>
</tbody>
</table>
• Many Community Groups develop their budgets by a “reverse” procedure

  – How much money have we got?
  – What can we afford to do?

**BEWARE:** this can lead to a derailment of focus and progress
RESTORATION