Climate Change
Carbon Offsets
&
Certified Organic Forestry

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FAO Workshop on Climate Change
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image sources: J. Paull unless otherwise noted
Why Organic Forestry?

Why Now?
Stern

image source: J. Paull
Nicholas Stern

- Government Economist
- Economists are credible bearers of bad news
- Cheaper to act now than later
- Adapt & mitigate
- We will get MORE trees, or at least NEW trees
Offset your carbon footprint... plant trees

image source: www.greenfleet.com.au
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Help us reduce greenhouse gas emissions!

As Virgin Blue and our international airline, Pacific Blue and Polynesian Blue, we take our commitment to minimizing the environmental impact of our business very seriously through a range of activities under our environmental management program.

Now we are pleased to also offer you our Guests the opportunity to offset the carbon emissions related to each flight you take with us.

Now it is even easier to offset

We have upgraded our system to allow guests to offset their Virgin Blue flight during the booking process. When checking your flight online you will now be presented with the option of offsetting your flight. If you take advantage of this offer you will be asked to select a carbon offset project that best suits your needs.

www.virginblue.com.au
You the forester...

- “feel good” forestry
- retail forestry ... a new phenomenon
- we become de facto tree planters
- “consumerization” of forestry
- what kind of forestry are we financing?
- and does it matter?
Economic instruments as tools of Environmental Management

• A history of success
• Results can be irreversible
• An example
RIP:  September 7, 1936
Tree planting lessons

image source: J. Paull
Glyphosate, an essential pre-planting herbicide

Tomkins, 2004

image source: J. Paull
What Sarah learned?
“First do no harm”

Hippocrates

c 460 BC - c 377 BC

image source: www.opiods.com
“For every complex problem there is a simple solution, and it’s wrong”

Mencken, 1920

image source: www.baltimoresun.com
Certified Forestry Worldwide

FSC 76.5MHa
29%

PEFC 190.8MHa
71%

FSC = Forestry Stewardship Council
PEFC = Programme for the Endorsement of Forest Certification

Data source: Crawford, 2006
Forestry Certification in Australia

Data source: Crawford, 2006
Forestry Industry - “key benefits of certification”:

# 1 benefit:

“An opportunity to de-politicise forestry”

Crawford, 2006, p.28 (Aus Govt publication)
How to grow trees

image source: J. Paull
Plantation Forestry

“Glyphosate, an essential pre-planting herbicide in plantation establishment, in most situations” (Tomkins, 2004, p. 71)

“the use of pesticides is an important management tool ... the use of residual herbicides ... is essential to give long term weed control” (Tomkins, 2004, Australian Forestry, p. 68)

“in a large scale industrial plantation ... mechanical application of pesticides is required” (Jenkin & Tomkins, 2006, FWPRDC, p. 6)
Triazine Herbicides Used On Food Crops (Davies et al., 1994)

Effects on Aquatic Organisms

- Cyanozine
- Metribuzin
- Propazine

(Graph source: Scammell, 2004)
Triazine Herbicides Used On Plantations (Davies et al., 1994)

(Graph source: Scammell, 2004)
Marked-up aerial photograph of forest scheduled for spraying - including exclusion zone.
Post-flight printout of chemical application to forest - flight paths of pesticide delivery

image source: Elliott & Hodgson, 2004, Tasforests, 15, p.34
Losing the pesticides...


<table>
<thead>
<tr>
<th>Pesticide</th>
<th>Registered trade name</th>
<th>Total samples</th>
<th>Guideline Value (GV) (µg/l)</th>
<th>Health Value (HV) (µg/l)</th>
<th>No. sample readings &gt; GV</th>
<th>No. sample readings &gt; HV</th>
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<tbody>
<tr>
<td><strong>Herbicides</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atrazine</td>
<td>Gesaprim</td>
<td>647</td>
<td>0.5</td>
<td>20</td>
<td>41</td>
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<tr>
<td>Clopyralid</td>
<td>Lontrel</td>
<td>106</td>
<td>1000</td>
<td>1000</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Dicamba</td>
<td>Banvel</td>
<td>9</td>
<td>N/A¹</td>
<td>100</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Diquat</td>
<td>Regione</td>
<td>2</td>
<td>0.5</td>
<td>5</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Glyphosate</td>
<td>Roundup</td>
<td>1590</td>
<td>10</td>
<td>1000</td>
<td>2</td>
<td>0</td>
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<tr>
<td>Haloxyfop-methyl</td>
<td>Verdict</td>
<td>62</td>
<td>N/A</td>
<td>N/A</td>
<td>ND²</td>
<td>ND</td>
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<tr>
<td>Hexazinone</td>
<td>Velpar</td>
<td>509</td>
<td>2</td>
<td>300</td>
<td>36</td>
<td>0</td>
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<td>MCPA</td>
<td>MCPA</td>
<td>4</td>
<td>N/A</td>
<td>N/A</td>
<td>ND</td>
<td>ND</td>
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<tr>
<td>Metosulam</td>
<td>Eclipse</td>
<td>6</td>
<td>N/A</td>
<td>N/A</td>
<td>ND</td>
<td>ND</td>
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<tr>
<td>Metsulfuron-methyl</td>
<td>Brushoff</td>
<td>1032</td>
<td>N/A</td>
<td>30</td>
<td>N/A</td>
<td>0</td>
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<td>Simazine</td>
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<td>36</td>
<td>5</td>
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<td>Sulfometuron-methyl</td>
<td>Oust</td>
<td>177</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Terbacil</td>
<td>Sinbar</td>
<td>44</td>
<td>10</td>
<td>30</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Triclopyr</td>
<td>Garlon</td>
<td>11</td>
<td>N/A</td>
<td>10</td>
<td>N/A</td>
<td>0</td>
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<tr>
<td><strong>Insecticides</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Alphamethrin</td>
<td>Alphamethrin</td>
<td>86</td>
<td>N/A</td>
<td>N/A</td>
<td>ND</td>
<td>ND</td>
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<tr>
<td>Alpha-cypermethrin</td>
<td>Dominex</td>
<td>19</td>
<td>N/A</td>
<td>N/A</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td>Chlorpyrifos</td>
<td>Chlorpyrifos</td>
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<td>N/A</td>
<td>N/A</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td>Cypermethrin</td>
<td>Cypermethrin</td>
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<td>N/A</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td>Spinosad</td>
<td>Success</td>
<td>32</td>
<td>N/A</td>
<td>N/A</td>
<td>ND</td>
<td>ND</td>
</tr>
</tbody>
</table>

¹N/A = no value specified in the Australian Drinking Water Guidelines (NHMRC 1996).
²ND = no pesticide detected when the sample was analysed.
Forestry Herbicides

“herbicides are usually applied only in the first and second season” Tomkins, 2004, p. 71

“aerially apply herbicides ... with spring, autumn and summer applications” Jenkin & Tomkins, 2006, p. 46
Forestry Pesticide Schedule

- **Herbicides** (eg Atrazine): pre-planting & first several years
- **Faunacides** (eg 1080): pre-planting against “browsing animals” eg wallabies, possums, pademelons etc
- **Insecticides** (eg Carbaryl): “as required”, most intensely in the first few years
- **Fungicides**: “used to treat plantations up to 15 years of age” Jenkin & Tomkins, 2006, p.118
Australian Forestry Pesticide List

- Herbicides x 25,
  (often used in combination, & includes atrazine & simazine)
- Insecticides x 9
- Fungicides x 2
- Adjuvants x 7, including synthetic latex

(source: Jenkin & Tomkins, 2006)
Devil Facial Tumour Disease (DFTD)

images source: www.dpiw.tas.gov.au
GMOs?

AFS (=PEFC): GMOs allowed

(Crawford, 2006)
Pesticide deficiency?

image source: J. Paull
Forestry Standards are weak standards:

• FSC Principle #1: “compliance with laws”
• FSC Principle #5: “ensure economic viability”
• FSC Criterion 6.6a: “strive to avoid the use of chemical pesticides”
• “Simazine is banned” under FSC... but there is an Australia-wide derogation (exemption) (Tompkins, 2006)
A Sham?

“Both the AFCS [AFS] and PEFC are a sham designed to pass off wood and wood products as legal and sustainable in markets where concerns over environmental and social justice have never been higher”

Wilderness Society, 2005, p.17
Certified Organic Forestry?

- No IFOAM Standard
- IFOAM Draft Standard 2002, voted down 2005
- Time to revisit Certified Organic Forestry
- “Fighting” CO₂ with atrazine, simazine, 1080 & glyphosate is ecological nonsense
Certified Organic Forestry Standards?

- There are 2 Certified Organic Standards
- Naturland - German Organic Certifier
- Debio - Norwegian Organic Certifier
## Carbon/Pesticide Matrix (CPM)

<table>
<thead>
<tr>
<th>Carbon/Pesticide Matrix</th>
<th>Pesticide Positive</th>
<th>Pesticide Neutral</th>
<th>Pesticide Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Positive</td>
<td>+,+</td>
<td>+,0</td>
<td>+,-</td>
</tr>
<tr>
<td>Carbon Neutral</td>
<td>0,+ Offset Chemical Forestry</td>
<td>0,0 Offset Organic Forestry</td>
<td>0,-</td>
</tr>
<tr>
<td>Carbon Negative</td>
<td>-,+ Offset Chemical Forestry</td>
<td>-,0 Organic Forestry</td>
<td>-,,-</td>
</tr>
</tbody>
</table>
Carbon offsets with Pesticide onsets ... is trading on a lie
One foot no good,
Two feet OK

(apologies to George Orwell)
Forestry...
“World’s Best Practice”?  
FSC 
PEFC (& AFS) 
“World’s Next Practice”?  
COF  
(Certified Organic Forestry)
Solution: 
Certified Organic Forestry Standard 
(a) Certifiers individually 
or 
(b) IFOAM

image source: J. Paull
Market drivers of Certified Organic Forestry
volunteer carbon offsetters
green consumers

New Foresters → New Rules

image source: J. Paull
Thank you & Questions

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