Conservation in Practice:
interpreting conservation plans in a production landscape

Brent Corcoran (Mondi)
Richard Lechmere-Oertel (BPM)
Mondi South Africa

- **Mondi Group - integrated pulp, paper & packaging value chains**
  - From managing plantation forestry
  - To producing pulp & paper
  - To developing and manufacturing industrial & consumer packaging solutions

- **Mondi South Africa - Forestry Landholdings**
  - ca. 254,000ha
  - 3 “ecoregions” across 2 provinces
  - 27 vegetation types represented
Prioritising conservation mgmt - Journey to date (Phase 2: 2010-2012)

- **High conservation values** - international concept (FSC), locally adapted

- **2010-2012 – Mondi HCVA Prioritisation Phase 2 (SANBI Grasslands Programme)**
  - Phase 1: HCV concept interpreted for MSA forestry landholdings by Mondi SA
  - Phase 2: Interpret provincial conservation planning outputs & supporting datasets for HCVA prioritisation

- **Step 1: HCVA Desktop assessment (2010-2012)**
  - Technical analysis of conservation plans & data layers
  - “Ground-truthed” through interviews with environmental team & foresters
  - **Result:** Roughly 8% (ca. 4000ha) of unplanted component of Mondi’s forestry landholdings interpreted as having some high conservation values
  - **Under-representation?**

- **Step 2: In-field verification of HCVAs (ongoing)**
  - External specialists
  - If HCV values present then baseline established for 3-5 yearly monitoring
HCV – in-field verification results

**Fauna**

- **Total species richness**: 411 species
  - **Mammals**: 52 spp (41%) of KZN total (126) (excl bats)
    - **Small mammals**: 22 spp (44%) of KZN total (50)
  - **Birds**: 260 spp (47%) of KZN total (555)
  - **Reptiles**: 50 spp (27%) of KZN total (187)
  - **Frogs**: 49 spp (68%) of KZN total (71)

- **36 Threatened & Near Threatened spp**
  - **Birds** – 17 Spp: 2 CR, 5 EN, 8 VU, 2 NT
  - **Mammals** – 10 Spp: 2 EN, 4 VU, 4 NT
  - **Frogs** – 5 Spp: 2 EN, 1 VU, 2 NT
  - **Reptiles** – 4 Spp: 2 VU, 2 NT

- Contributes to **provincial species datasets & conservation planning**
- Need to **address management issues** such livestock & fire management
HCV – in-field verification results
Flora

● Sites categorised according geographical area & vegetation similarity:
  ○ Zululand coast, Coastal escarpment, Midlands, North-west KZN, Mpumalanga

● Significant contribution to
  ○ KZN Herbarium
  ○ Provincial species datasets & conservation planning

● Management recommendations
  ○ Need focus on fire & grazing management

Photos: David Styles
Phase 2 – accurate to some degree, but some challenges & limitations

Including relying on 2 tenuous assumptions

- **Biodiversity data are spatially accurate, and that a boundary in GIS is a boundary on the ground**
  - Only true for data generated from detailed fieldwork ||| Most biodiversity data are generalised patterns of biodiversity distribution

- **Mondi’s compartment boundaries bear some semblance to on-the-ground patterns of management and ecology**
  - Compartment boundaries frequently are not related to reality ||| Most compartments include spatially- &/or ecologically- unrelated polygons

Under-representation of conservation values??

Input data-sets outdated

Phase 3: HCVA Update
Phase 3: HCVA Update

- **Approach for Phase 3 (2017-2018)**
  - Use latest data sets
  - Integrate strengths of data-driven approach with applied ecological science
  - **Two Step Analysis**
    - **Plantation-scale analysis** based on proximity to important biodiversity areas
    - **Compartment-scale analysis** based on GIS-based biodiversity priorities and pragmatic ecology
Mondi 2018 HCVA prioritisation – initial overlays
Mondi 2018 HCVA prioritisation – initial overlays
Mondi 2018 HCVA prioritisation – at plantation level

- **Method:**
  - Plantations buffered by 1km, intersected with KZN CBA & MBSP
  - **Plantations coded according to 3 HCVA categories:**
    - HCVA 0: No particular conservation value
    - HCVA 1: Significant intersection with CBAs or ESAs
    - HCVA 2: Significant contribution to landscape connectivity between neighbouring CBAs and ESAs.
    - HCVA 3: Close proximity or adjacency to a protected area.
  - Categories are mutually-exclusive and in order of priority

- **KZN**
  - At plantation level, 1km buffer
    - generated list of top 10 features driving CBA selection
  - **Application**
    - Confirms if priority or not
    - Informs plantation forester what they should be managing for
Approach tries to address key GIS & implementation issues
- GIS intersection approach brings challenges when intersecting CBAs with unplanted areas
- Due to constraints of provincial level plans
- Due to configuration of Mondi mgmt compartments
  - Still need systematic process to re-align compartment boundaries relative to ecological & plantation management requirements

Approach
- Step 1: Used set of rules to prioritise through GIS
- Step 2: “by eye” to build connectivity
  - Apply landscape scale ecological principles
  - Expert driven / common sense approach to prioritisation at compartment level

<table>
<thead>
<tr>
<th>HCV No.</th>
<th>Compartment selection rules</th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CBA Irreplaceable &gt; 20 % of compartment area</td>
<td>Critically Important – CBA Irreplaceable</td>
<td>CI_CBA(Irr)</td>
</tr>
<tr>
<td>2</td>
<td>CBA Irreplaceable &gt; 5 % OR CBA Optimal &gt; 20 % of compartment area.</td>
<td>Important – CBA Optimal</td>
<td>I_CBA(Opt)</td>
</tr>
<tr>
<td>3</td>
<td>CBA Optimal &gt; 5 % OR ESA &gt; 20 % of compartment area.</td>
<td>Valuable – Ecological Support Area</td>
<td>V_ESA</td>
</tr>
<tr>
<td>4</td>
<td>Ecological network selected by eye to connect neighbouring CBAs or ESAs or across plantations.</td>
<td>Valuable – Ecological Network (by eye)</td>
<td>V_EN</td>
</tr>
<tr>
<td>5</td>
<td>Large open area selected by eye.</td>
<td>Valuable – Large Open Area (by eye)</td>
<td>V_LOA</td>
</tr>
<tr>
<td>6</td>
<td>Not selected above but was ‘Critically Important’ in 2012 HCV analysis.</td>
<td>Critically Important – HCV 2012</td>
<td>CI_2012</td>
</tr>
<tr>
<td>7</td>
<td>Not selected above but was ‘Important’ in 2012 HCV analysis.</td>
<td>Important – HCV 2012</td>
<td>I_2012</td>
</tr>
<tr>
<td>8</td>
<td>Not selected above but was ‘Valuable’ in 2012 HCV analysis.</td>
<td>Valuable – HCV 2012</td>
<td>V_2012</td>
</tr>
<tr>
<td>9</td>
<td>Not selected above</td>
<td>Other Natural Area</td>
<td>ONA</td>
</tr>
</tbody>
</table>

Compartment level HCVA prioritisation – preliminary results
Effective management of HCV Areas

● How apply management to HCVAs
  o Treat at potential HCVAs until ground-truthed
    - Manage for basic ecological integrity & benefits & then for biodiversity
    - Prioritise mgmt investment into key threats to HCV values
  o Verify values exist - if so, build into monitoring program
  o Use map-based EMPs to guide day-to-day / annual management

● Question:
  o What mechanism / approach is there to feed data & thinking back into the KZN & Mpumalanga conservation plans?
Lessons learned

● Scale
  o Provincial conservation plans suitable at provincial and municipal scales for land use decision making
  o But need some work to apply them at scale of day to day land management, especially in production landscapes

● Mondi’s Approach
  o Addresses risk of missing unselected areas with material biodiversity values
  o Defensible GIS & applied ecological science approach to considering proximity and connectivity

● Value of conservation area / ecological networks in production landscapes
  o Significant opportunity to contribute to conservation targets
  o Whether large corporate owned & managed like Mondi or smallgrowers (forestry and agric)

● Risk of species data in conservation plans
  o Risk of undermining applicability of conservation plans if heavily reliant on or biased by non-prioritised species data
Mondi Ecological Networks Programme

Stellenbosch University: Department of Conservation Ecology & Entomology

- Long-standing (>15 yrs) research collaboration between Mondi & Stellenbosch University

- Terrestrial Assessment Protocol – project by Dr Lize van der Merwe

Terrestrial Assessment Protocol (TAP) - an integrated tool to enable smart environmental management in forestry plantations

Lize Joubert-van der Merwe and Michael J. Samways

Research priorities
- Conservation

Ecological response
- Ecological

Management effectiveness
- Management

Compliance with best environmental management practices:
- 7 sectors - threats / drivers of biodiversity
- 170 closed-ended = 170 spin-off indicators
- Online Google platform
- Time required: 30 mins per plantation
- Sample size: 16 plantations
- Reports are ICM Mandalas and Zululand

Example 1 SQF, Kwambonambi

Hierarchy of priorities
- Wetland

Results: Compliance with best practice
- 90%

Example 2 A/hrens, Baviaanskraantz

Hierarchy of priorities
- Wetland

Results: Compliance with best practice
- 90%

* Only for closed-ended questions
Forward-looking statements disclaimer

This document includes forward-looking statements. All statements other than statements of historical facts included herein, including, without limitation, those regarding Mondi’s financial position, business strategy, market growth and developments, expectations of growth and profitability and plans and objectives of management for future operations, are forward-looking statements. Forward-looking statements are sometimes identified by the use of forward-looking terminology such as ‘believe’, ‘expects’, ‘may’, ‘will’, ‘could’, ‘should’, ‘shall’, ‘risk’, ‘intends’, ‘estimates’, ‘aims’, ‘plans’, ‘predicts’, ‘continues’, ‘assumes’, ‘positioned’ or ‘anticipates’ or the negative thereof, other variations thereon or comparable terminology. Such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Mondi, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Such forward-looking statements and other statements contained in this document regarding matters that are not historical facts involve predictions and are based on numerous assumptions regarding Mondi’s present and future business strategies and the environment in which Mondi will operate in the future. These forward-looking statements speak only as of the date on which they are made.

No assurance can be given that such future results will be achieved; various factors could cause actual future results, performance or events to differ materially from those described in these statements. Such factors include in particular but without any limitation: (1) operating factors, such as continued success of manufacturing activities and the achievement of efficiencies therein, continued success of product development plans and targets, changes in the degree of protection created by Mondi’s patents and other intellectual property rights and the availability of capital on acceptable terms; (2) industry conditions, such as strength of product demand, intensity of competition, prevailing and future global market prices for Mondi’s products and raw materials and the pricing pressures thereto, financial condition of the customers, suppliers and the competitors of Mondi and potential introduction of competing products and technologies by competitors; and (3) general economic conditions, such as rates of economic growth in Mondi’s principal geographical markets or fluctuations of exchange rates and interest rates.

Mondi expressly disclaims

a) any warranty or liability as to accuracy or completeness of the information provided herein; and

b) any obligation or undertaking to review or confirm analysts’ expectations or estimates or to update any forward-looking statements to reflect any change in Mondi’s expectations or any events that occur or circumstances that arise after the date of making any forward-looking statements,

unless required to do so by applicable law or any regulatory body applicable to Mondi, including the JSE Limited and the LSE.