Monitoring: How are protected areas responding to incidents and impacts of illegal and legal goldmining

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Protected Areas Commission
Introduction

• Department responsible -> Ecological Treat Monitoring & Research

• Team involved -> EMR technical staff & rangers

• Developing and implementing monitoring protocols
  – Overflight protocols
  – Mercury & Water quality testing protocols
  – Ranger based patrols
Overflights
# Information collected

<table>
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<tr>
<th>WP</th>
<th>Coordinates</th>
<th>Time</th>
<th>Area Description</th>
<th>Mining Y/N</th>
<th>Status A/A</th>
<th>Machinery E D T B A</th>
<th>Trails Y/N</th>
<th>Camp Y/N</th>
<th>Notes</th>
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## Graphics
- Coordination & location
- Type of operation
- No. of camps
- Type of equipment
- No. of individuals
- Trails
- Size of operation
Mercury and water quality testing
• Mercury test of:
  – Important fish species
  – Water sample
  – Sediment samples

• Water quality testing
  – using Aqua Troll probe -> 18 parameters, specifically turbidity

Where? - Major rivers within the Protected Area,
Why? - Effects of legal mining upstream

Currently analyzing results
Ranger based patrol
Process of address treats of illegal gold mining

1. Report of incident
   Ranger patrol or informal complaints

2. Observation
   Overflight, ground truthing and collection of data

3. Analysis and reporting
   Report is produced and submitted to PAC management

4. Follow up
   Contacting stakeholders and/or relevant authorities, (GGMC, GDF, etc)
Challenges

• Remoteness and Inaccessibility

• Safety Issues

• Limited capacity & Resources (Financial and Human)