

Contents

<u>Wildlife vs Monitoring</u>	2
<u>Australian Bioregions (IBRA) and Protected Areas</u>	Error! Bookmark not defined.
<u>Animal Ethics Approvals and Scientific Licences</u>	Error! Bookmark not defined.
<u>Scales of Biodiversity</u>	Error! Bookmark not defined.
<u>Habitat Assessment</u>	Error! Bookmark not defined.
<u>Population Indices and Occupancy</u>	Error! Bookmark not defined.
<u>Evidence-based 'adaptive management'</u>	Error! Bookmark not defined.
<u>Population Dynamics</u>	Error! Bookmark not defined.
<u>Abiotic and Biotic Factors Affecting Population Growth Rate</u>	Error! Bookmark not defined.
<u>Factors affecting population growth rates</u>	Error! Bookmark not defined.
<u>Life histories (Trade-offs, fast-slow continuum)</u>	Error! Bookmark not defined.
<u>Response to Stressors</u>	Error! Bookmark not defined.
<u>Types of Threats</u>	Error! Bookmark not defined.
<u>Threatening Process</u>	Error! Bookmark not defined.
<u>Introduction to Insects</u>	Error! Bookmark not defined.
<u>Australian Insects Vs NZ Insects</u>	Error! Bookmark not defined.
<u>Threats to Insects</u>	Error! Bookmark not defined.
<u>Insects and their conversation</u>	Error! Bookmark not defined.
<u>Insects and Ecosystem Services</u>	Error! Bookmark not defined.
<u>Introduction to amphibians</u>	Error! Bookmark not defined.
<u>Amphibians and how to survey them</u>	Error! Bookmark not defined.
<u>Austral amphibian lineages</u>	Error! Bookmark not defined.
<u>Amphibians and threatening processes</u>	Error! Bookmark not defined.
<u>Case study: The Southern Corroboree Frogs</u>	Error! Bookmark not defined.
<u>Introduction to reptiles</u>	Error! Bookmark not defined.
<u>Reptiles and how to trap them</u>	Error! Bookmark not defined.
<u>Reptiles and threatening processes</u>	Error! Bookmark not defined.

LECTURE

TWO Wildlife

Survey and Monitoring

Today's lecture – main points

- Wildlife surveys vs. monitoring
- Australian Bioregions (IBRA) and protected areas
- Animal ethics approvals and scientific licences
- Stratified sampling effort
- Vegetation types and current extent of cover
- Scales of biodiversity
- Habitat assessment and wildlife detection
- Population indices and occupancy
- Adaptive management

Wildlife vs Monitoring

MONITORING

- Access the **change** or **trend** in 1 or more resources
- Requires repeated sampling over time
- Sampling must *distinguish* change or trend *from* random variation and measurement error

Monitoring studies

- Assessment of change in status of a resource over time
 - (c.f. inventory study) **inventories** are conducted to **determine the distribution and composition** of wildlife and wildlife habitats in areas where such **information is lacking**, and **monitoring** is typically used to **understand rates of change** or the **effects of management practices** on wildlife populations and habitats
- Importance of **identifying specific objectives**
 - Species, area, and time periods
 - Sampling strategy, sample size and analytical methods
- What parameters to measure?
- What is the ideal: birth rates, survival ('vital' rates), but often difficult or non-feasible
- Practical: habitat structure, population indices, presence/absence (occupancy), abundance, and density

Structure based monitoring

- Presence or absence of **key habitat features known to be closely linked with presence**
 - E.g. large old, hollow-bearing trees, rock outcrops, saves, creek lines
- **Advantages**: Not reliant on detecting the species

Inventories (fauna surveys)

Assess the **state** or **status** of 1 or more resources

- Key **1st step in management** of *wildlife* and *habitat*, *conservation*, and *impact assessment*

To describe the fauna of a new area, or the presence of a specific species e.g. threatened species

