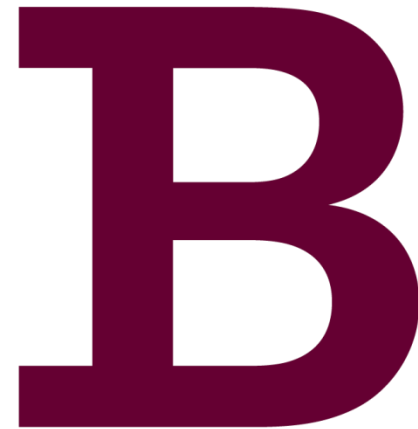




In situ and ex situ gap
analysis – part 1

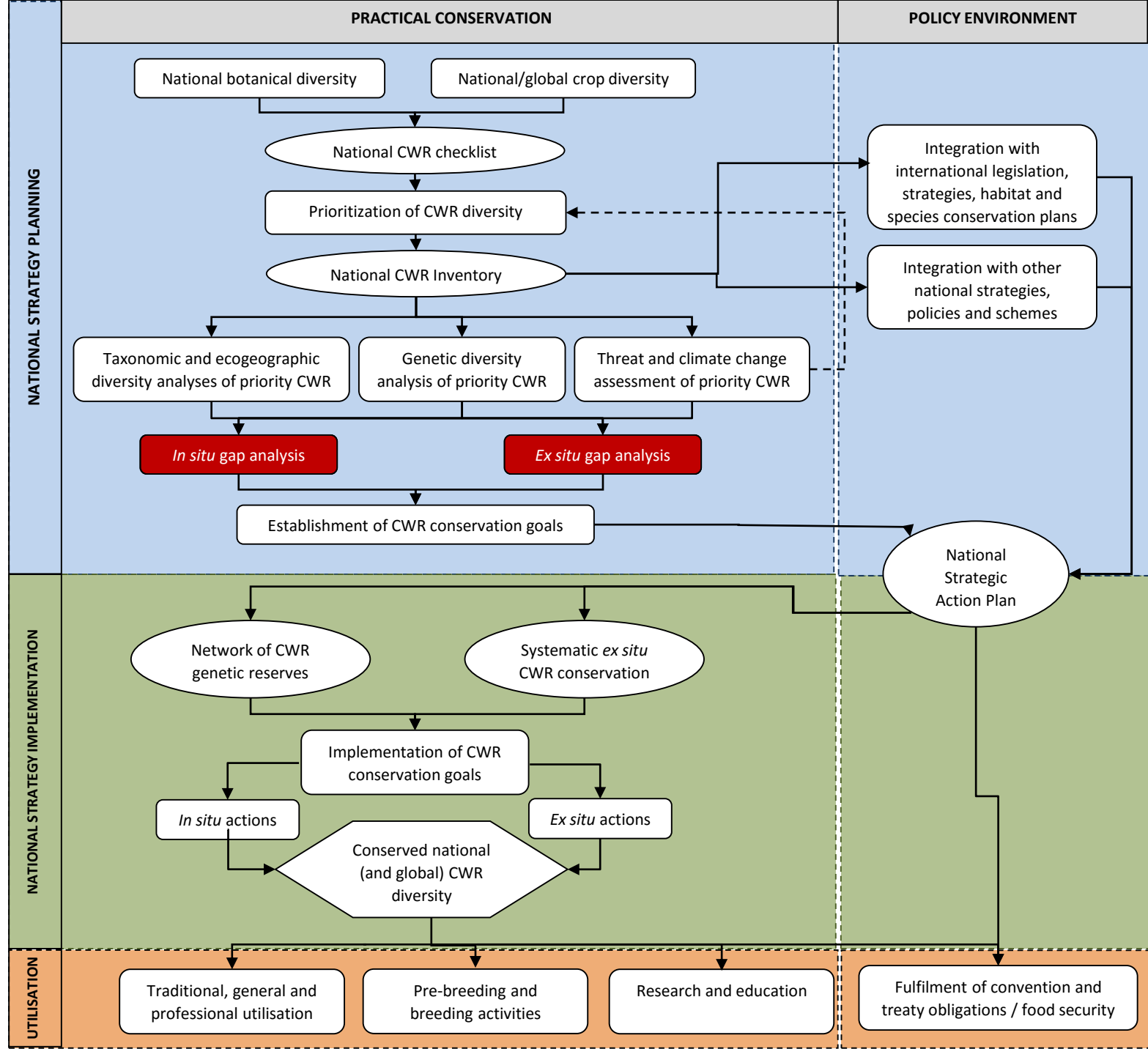


Joana Magos Brehm, Nigel Maxted

CWR conservation planning workshop

29-30 October 2015, University of Birmingham, UK

CWR CONSERVATION PLANNING PROCESS



CWR CONSERVATION PLANNING – SUMMARY

1. Generation of CWR checklist (which CWR exist in...?)
2. Selection of priority crop gene pools (which CWR are more important to conserve?)
3. Diversity and **gap analysis** (and climate change analysis) to select target sites for conservation (where are priority taxa located and **are there gaps in their conservation?**)
4. Recommendations for *in situ* / *ex situ* conservation action (where should we actively conserve priority taxa *in situ* and where should we collect for *ex situ* conservation?)
5. (Implementation of *in situ* / *ex situ* conservation action within and outside existing PA)

Excel,
Access

DIVA-GIS /
ArcGIS, MaxEnt,
CAPFITOGEN

CONTENT

- What is gap analysis?
- Levels of gap analysis
- Individual CWR taxon gap analysis
- Ecogeographic diversity gap analysis

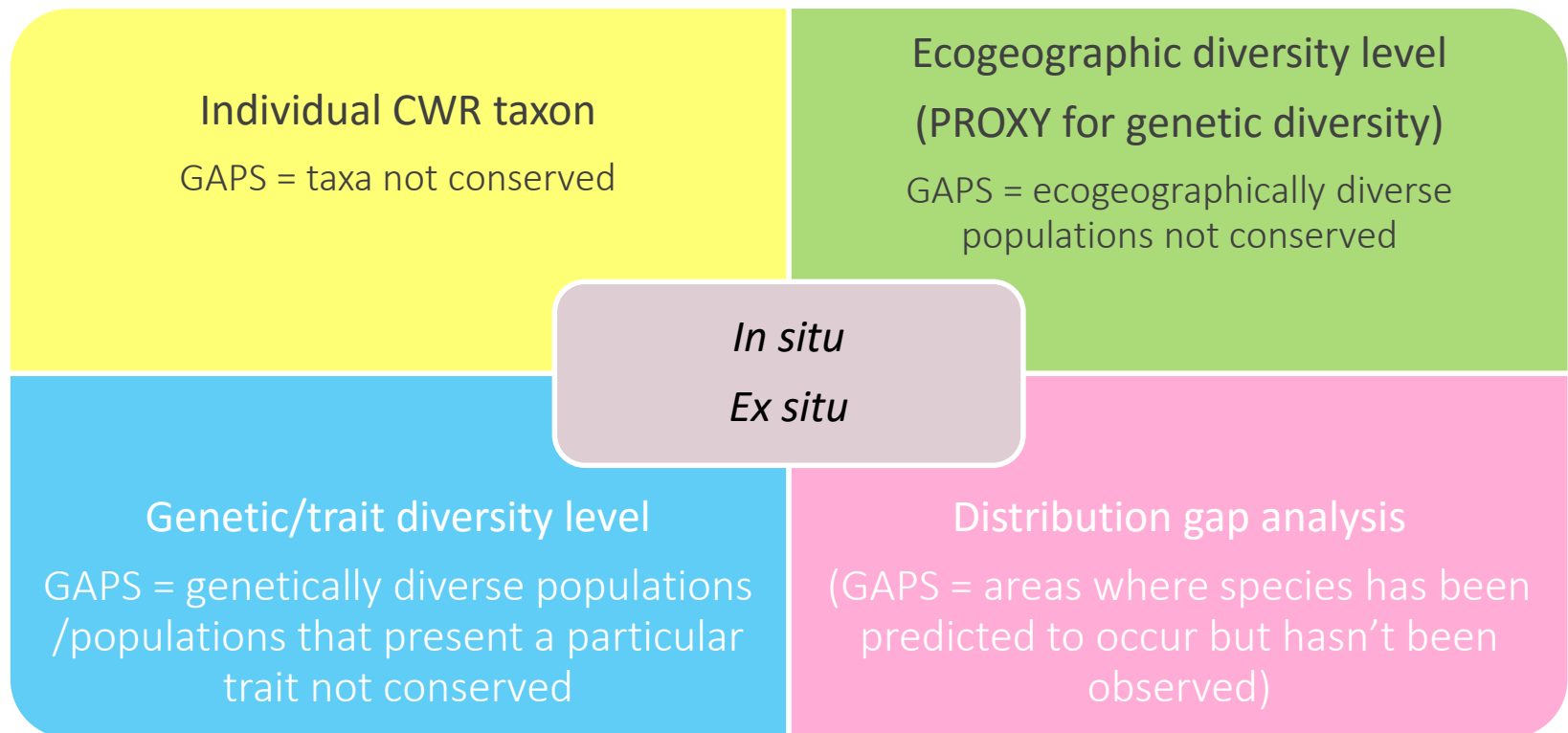
WHAT IS 'GAP ANALYSIS'?

- A conservation evaluation technique that assists the prioritization of biodiversity elements for conservation action by **identifying 'gaps'** in the conservation of those elements
- Compares natural patterns of diversity with the diversity that is already conserved, and identifies **'gaps'** in the biodiversity elements where **natural diversity is not actively conserved**, either *in situ* (***in situ* gap analysis**) or *ex situ* (***ex situ* gap analysis**)



LEVELS OF GAP ANALYSIS

Depends on the objective of the study as well as on the type of data available



INDIVIDUAL CWR TAXON GAP ANALYSIS

Excel,
Access

- Species level
- Compare priority CWR with taxa conserved *in situ*:
 - GAPS = species that do not occur within PAs
 - GAPS = species that do occur within PAs but are not actively conserved
- Compare priority CWR with taxa conserved *ex situ* in gene banks:
 - GAPS = species not conserved *ex situ*

<i>Sorghum halepense</i>	<i>Origanum punonense</i>	<i>Satureja nabateorum</i>
<i>Solanum villosum</i>	<i>Iris edomensis</i>	<i>Lupinus pilosus</i>
<i>Brassica nigra</i>	<i>Crocus moabticus</i>	<i>Aegilops bicornis</i>
<i>Vicia lutea</i>	<i>Astragalus macrocarpus</i>	<i>Iris bismarckiana</i>
<i>Vicia galeata</i>	<i>Origanum petraeum</i>	<i>Cupressus sempervirens</i> var. <i>horizontalis</i>
<i>Astragalus eremophilus</i>	<i>Allium curtum</i>	<i>Melilotus messanensis</i>
<i>Vicia herbacea</i>	<i>Astragalus sieberi</i>	<i>Daucus durieua</i>
<i>Ficus palmata</i>		

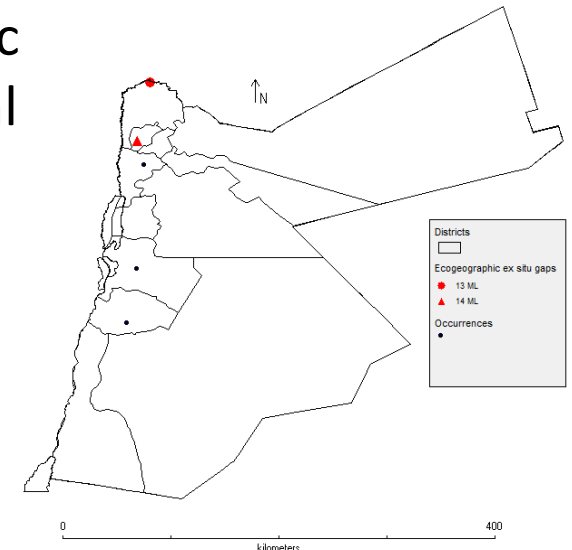
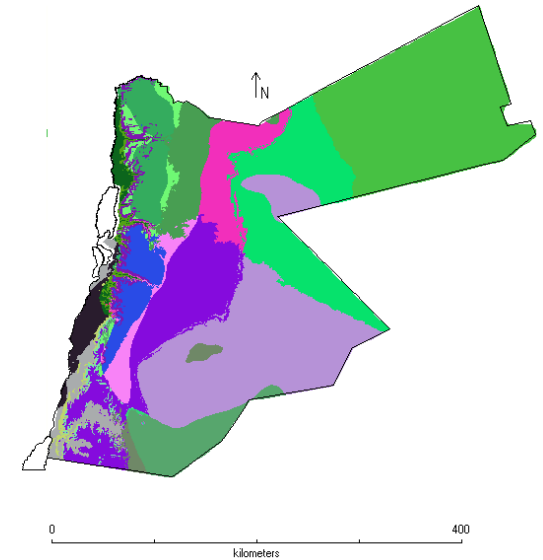
Not conserved
ex situ!
(Jordan)

UNIVERSITY OF
BIRMINGHAM



ECOGEOGRAPHIC DIVERSITY GAP ANALYSIS

- Intra-specific level
- Compare complete range of ecogeographic diversity with that already conserved (*in situ/ex situ*)
 - GAPS = ecogeographic units not actively conserved *in situ/ex situ*
- Create species Ecogeographic Land Characterization (ELC) map - climatic, edaphic geophytic variables that best reflect potential adaptive scenarios for the species
- Overlap taxon distribution with ELC map
- Detect those ecogeographic categories not conserved *in situ/ex situ* – conservation recommendations



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Questions?

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