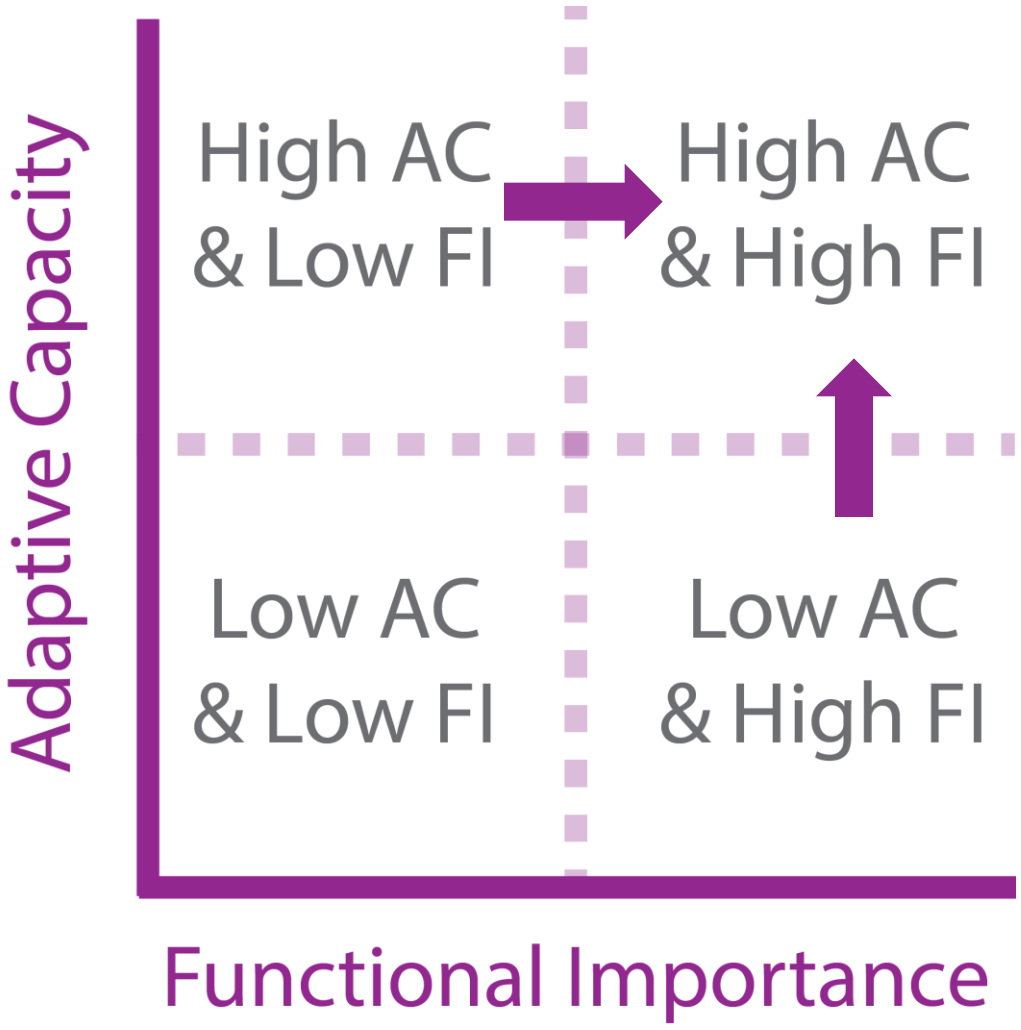
Expert Elicitation: A tool for predicting adaptive capacity in Australian mountain plant communities

Sonya Geange | Australian National University

on behalf of the NCCARF Expert Working Group

How can we predict which species will fare best under a changing climate and prioritise management efforts accordingly?

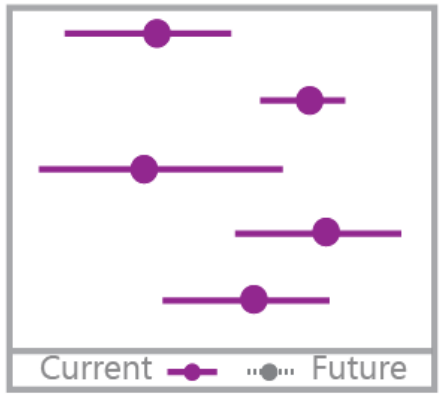
The **adaptive capacity** and **functional importance** framework

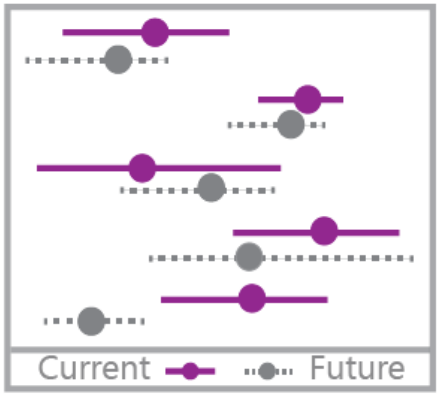


Climate change is rapid &
data may be not always be available

What role might **expert elicitation** play?

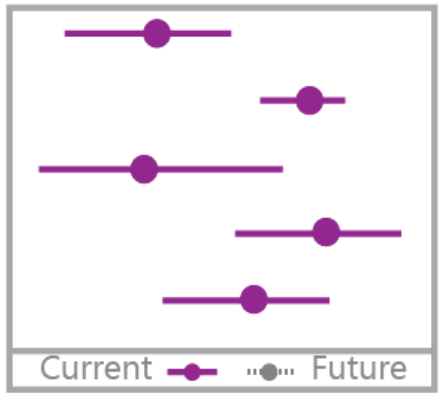
The IDEA Protocol for Expert Elicitation

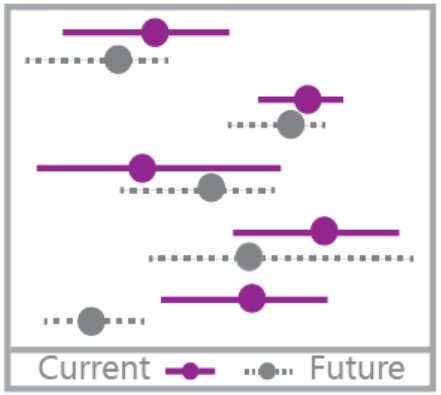




1. Recruit diverse group of experts
2. **Investigate** + initial private estimate
3. Aggregate estimates & feedback across experts
4. **Discuss** responses as group
5. Privately revise **Estimates** then **Aggregate**

The IDEA Protocol for Expert Elicitation





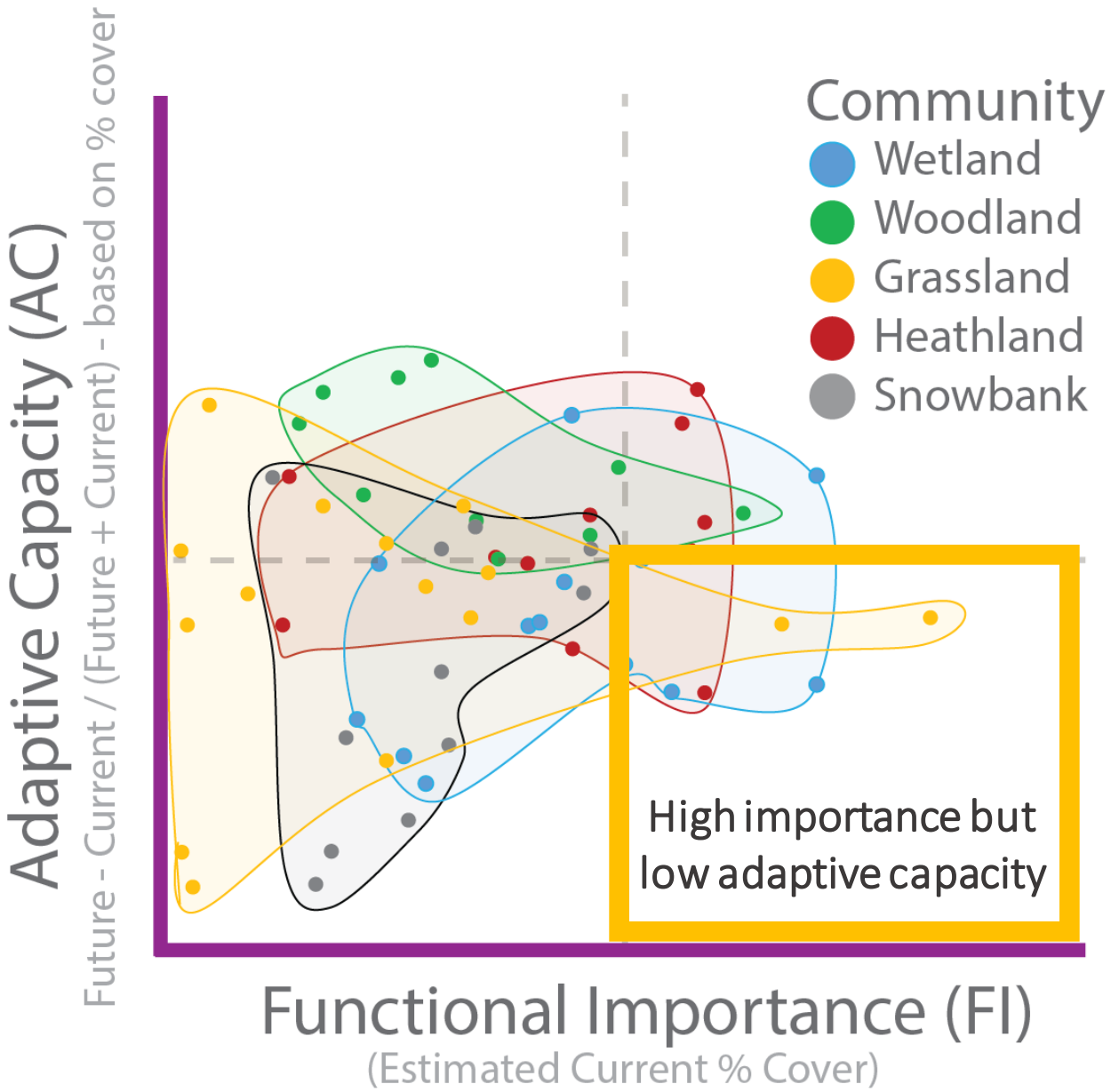
1. Recruit diverse group of experts → 2. **Investigate** + initial private estimate → 3. Aggregate estimates & feedback across experts → 4. **Discuss** responses as group → 5. Privately revise **Estimates** then **Aggregate**

Reduced Biases | Quantitative Outputs | Estimates of Uncertainty

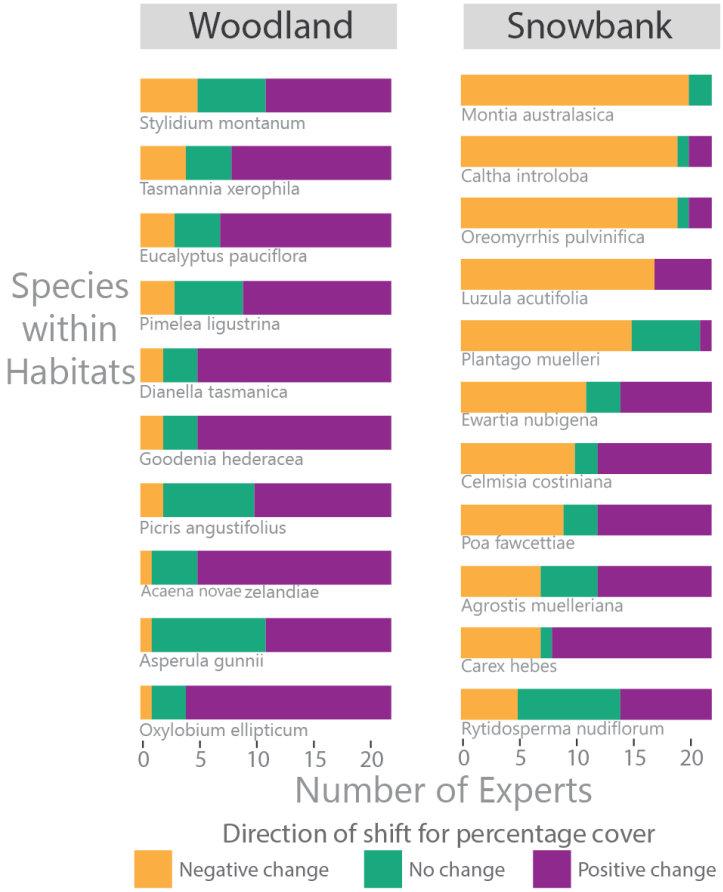
Australian Alpine Communities & Species

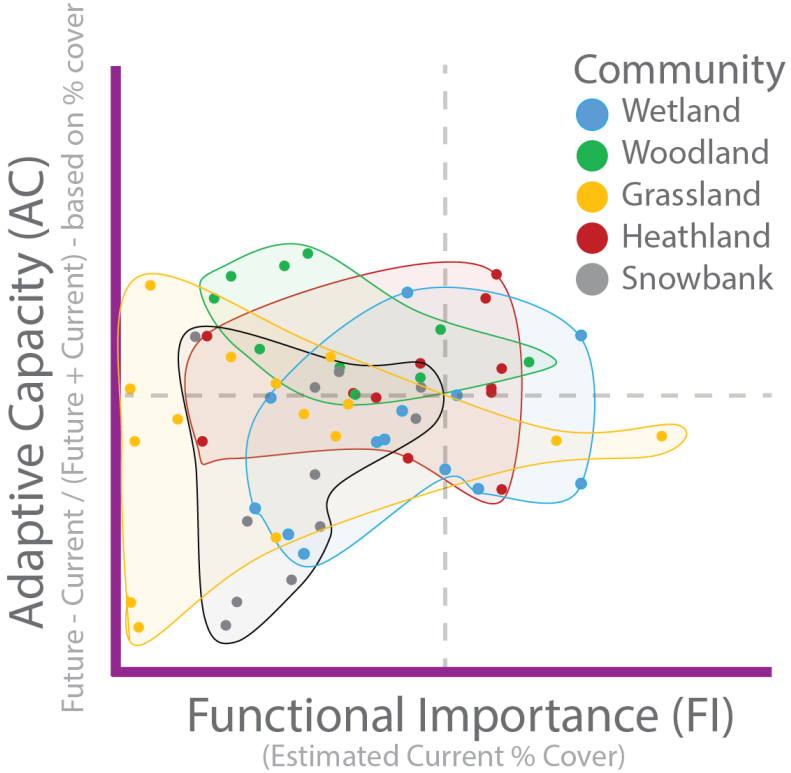
Community level shifts predicted with high certainty

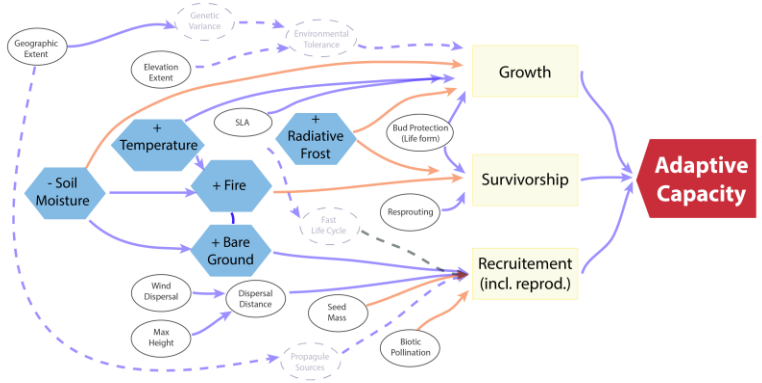
Species level less so



Expert Elicitation Outputs







Direction of Change

Adaptive Capacity & Functional Importance

Attributes Contributing To Adaptive Capacity

Home My Elicitations Administration Training About Contact Hello sonya.geange@anu.edu.au! Log off

Adaptive Capacity IDEA

The Adaptive Capacity IDEA applications allows solicitating and aggregrating information from experts.

Learn more »

Elicitations

This interface applies the IDEA protocol to support for elicitation of expert judgement about current and future distributions of species from which to derive an estimate of Adaptive Capacity.

Discussion

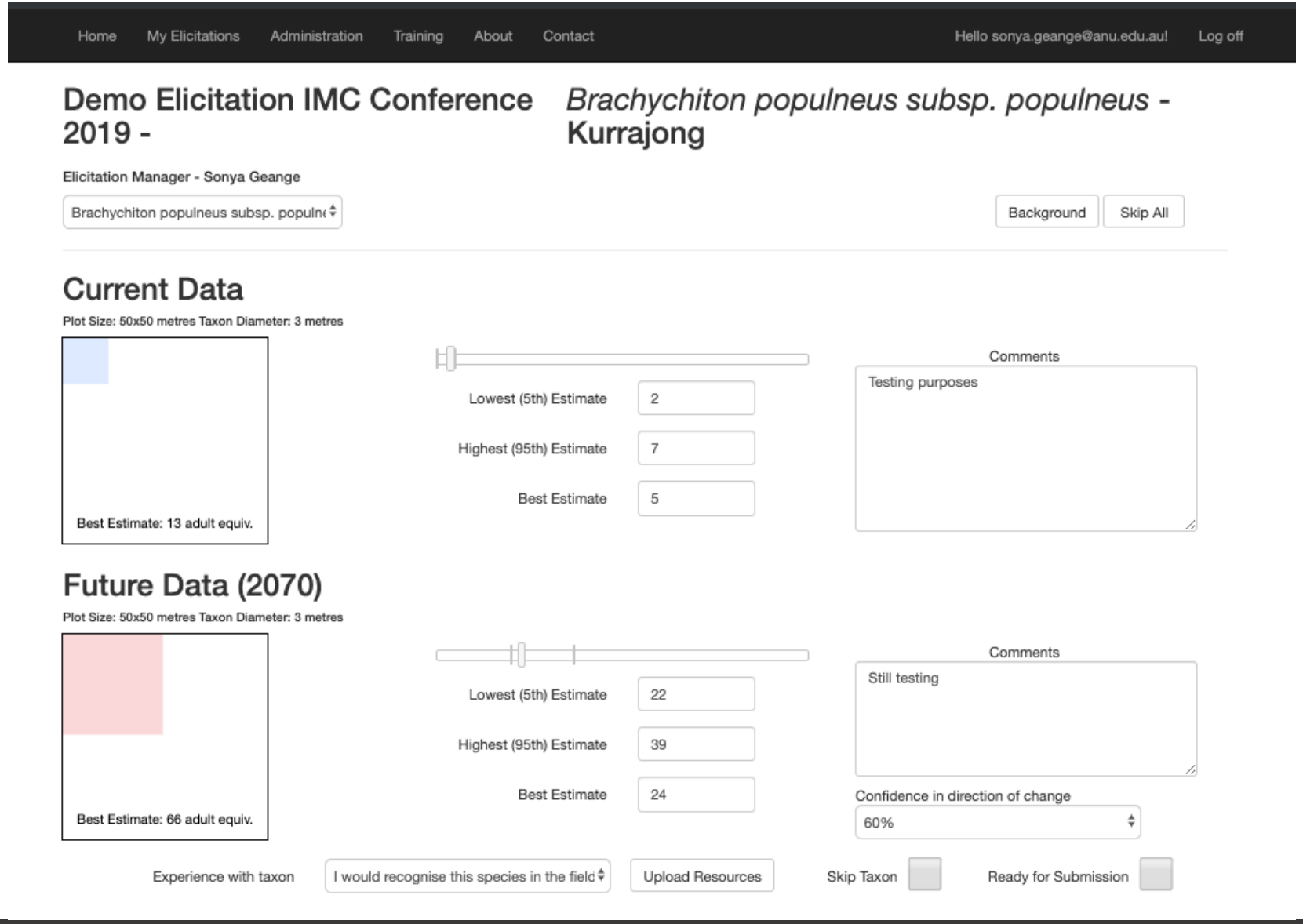
Once elicitation is complete the data can be brought together for discussion amongst the experts.

Analytics

All the data collected by the system can be downloaded for aggregation and later analysis.

© 2019 - Australian National University

Online Webtool for Expert Elicitation



Online Webtool for Expert Elicitation

Home My Elicitations Administration Training About Contact Hello sonya.geange@anu.edu.au

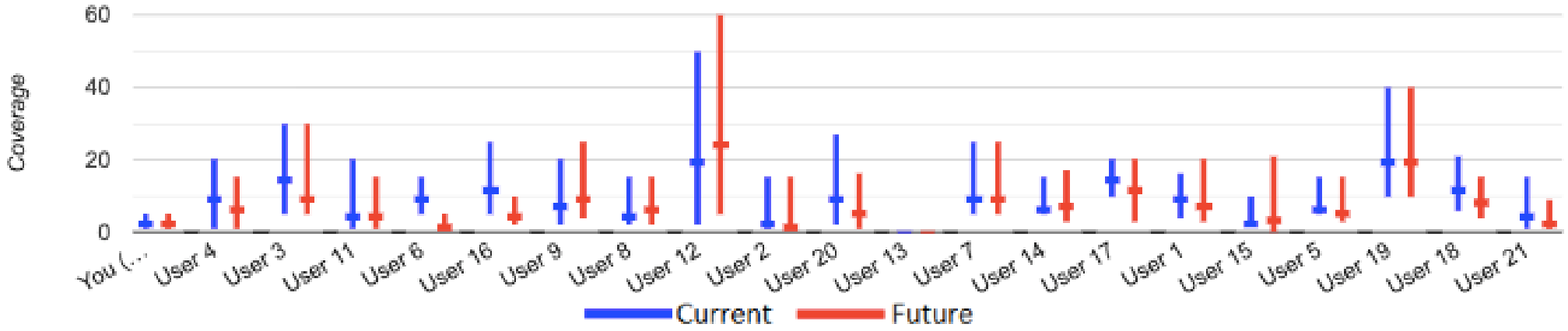
Dryland training species - *Atriplex leptocarpa* - Slender-fruit Saltbush

Elicitation Manager - Sonya Geange

Atriplex leptocarpa

Background Resources

Initial estimates for consideration - Hover for comments



Save Chart

Online Webtool for Expert Elicitation

Sonya Geange (ANU), Adrienne Nicotra (ANU), John Morgan (LaTrobe), Keith McDougall (OEH), Ary Hoffmann (UoM), Susanna Venn (Deakin), Peter Vesk (UoM), bJames Camac (UoM), Anca Hanea (UoM), Emma Burns (ANU), Michael Doherty (ANU), Louise Gilfedder (UTas), Lydia Guja (ANBG), Goeffrey Hope (ANU), David Keith (UNSW/OEH), Sandra Lavorel (CNRS, France), Joe McAulliffe (ANBG), Scott Mooney (UNSW), James Shannon (LaTrobe), Mel Shroder (NSW Parks), Rachel Slatyer (ANU), Elaine Thomas (Parks Vic), Kate Umbers (WSU), Neville Walsh (RBG), Jennie Whinam (UTas), and Genevieve Wright (OEH)