
















economics
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MARSDEN JACOB ASSOCIATES
CELEBRATING 25 YEARS

Talks Live

Valuing natural capital with economics.

Dollars, sense and nonsense

A Marsden Jacob Presentation

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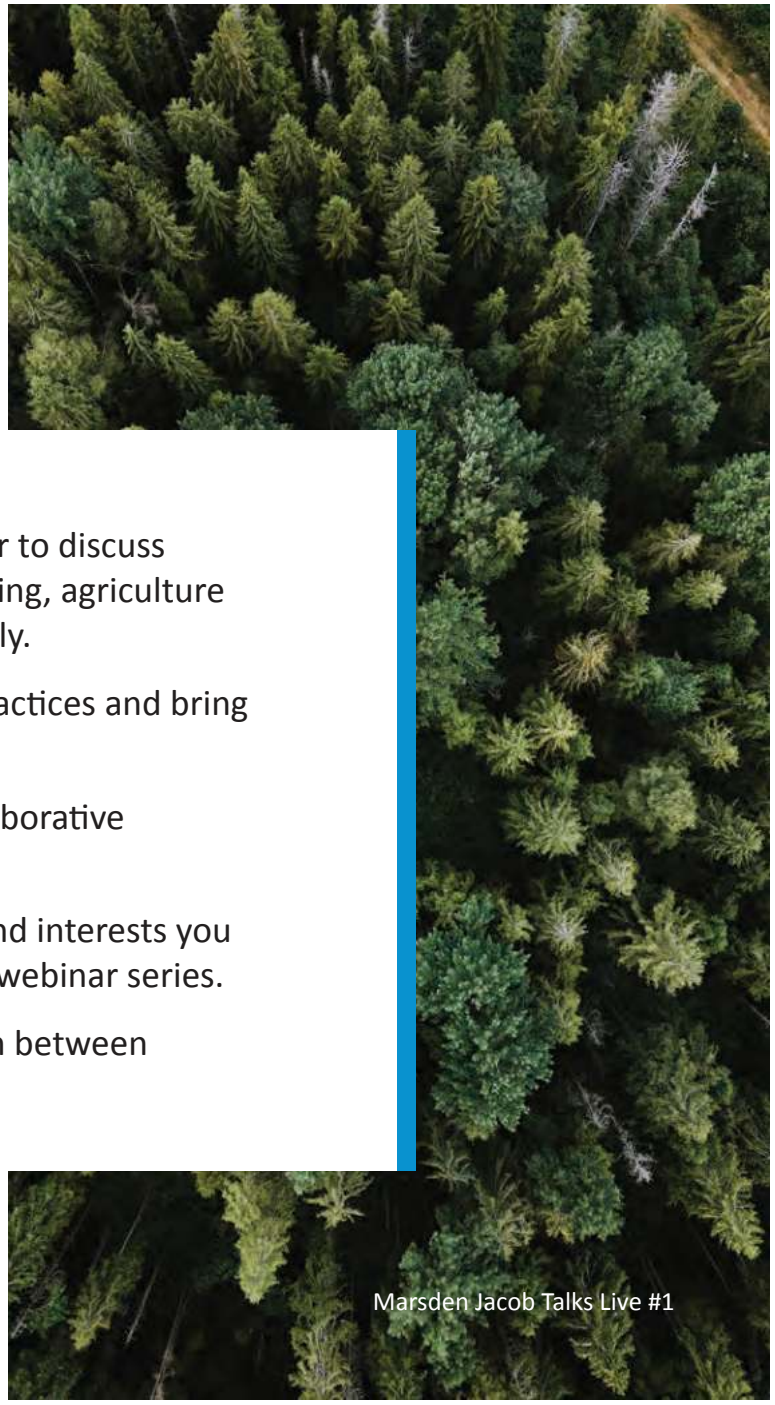


The **Marsden Jacob Talks Live** webinar series brings people together to discuss pressing issues across environment, energy, water, waste and recycling, agriculture and earth resources and other sectors in Australia and internationally.

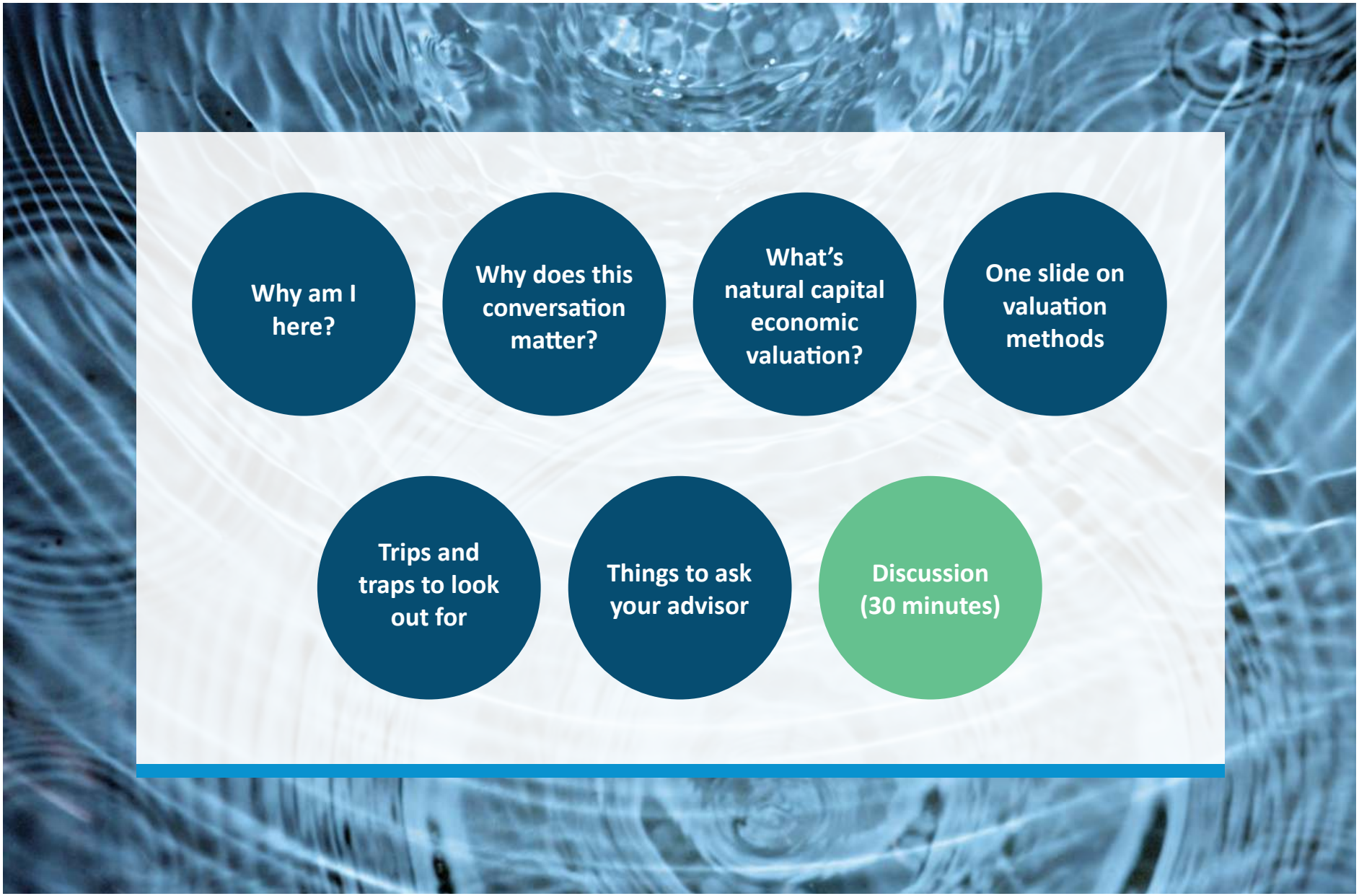
These free webinars are open to everyone. We aim to share best practices and bring the latest research and thinking to a broad audience.

Our focus in these events is on encouraging open, positive and collaborative discussion amongst webinar participants.

We encourage you to come with questions, opinions, experience, and interests you can share. We also welcome your thoughts on future topics for our webinar series.

Each live event includes a presentation, followed by open discussion between webinar participants.

Marsden Jacob Talks Live #1


Why am I here?
Why does this conversation matter?
What's natural capital economic valuation?
One slide on valuation methods
Trips and traps to look out for
Things to ask your advisor
Discussion (30 minutes)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Why am I here?

Dr Jeremy Cheesman

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- **PhD in environmental and resource economics from the Australian National University,** focus on valuing natural capital (before it became in vogue).
- **20 years experience in valuing natural capital,** including peer reviewed journal papers, book chapters, post-graduate tutoring and teaching.
- **Led research applying most of the main natural capital valuation** methods, knows what goes on inside the black-box.
- **Advisor to Local, State and Commonwealth,** knows how to straddle academic and real-world practice.
- Bit of a natural capital valuation fanatic.


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Why does this conversation matter?

Natural capital stocks and flows are valuable to us, often hugely so.

- **If something is valuable, we should be thinking about it when we are making decisions,** including investment decisions.
- **Natural Capital Economic Values (NCEV) help include NC in decisions** and quantify values in ways that align with Government requirements for investment and decision making.
- **NCEV can support discussions and communications** around the value of natural capital to the community – including things like agricultural and recreational benefits.
- **People are gaining confidence in NCEV.** We need to provide robust fit-for-purpose valuations otherwise confidence will erode.


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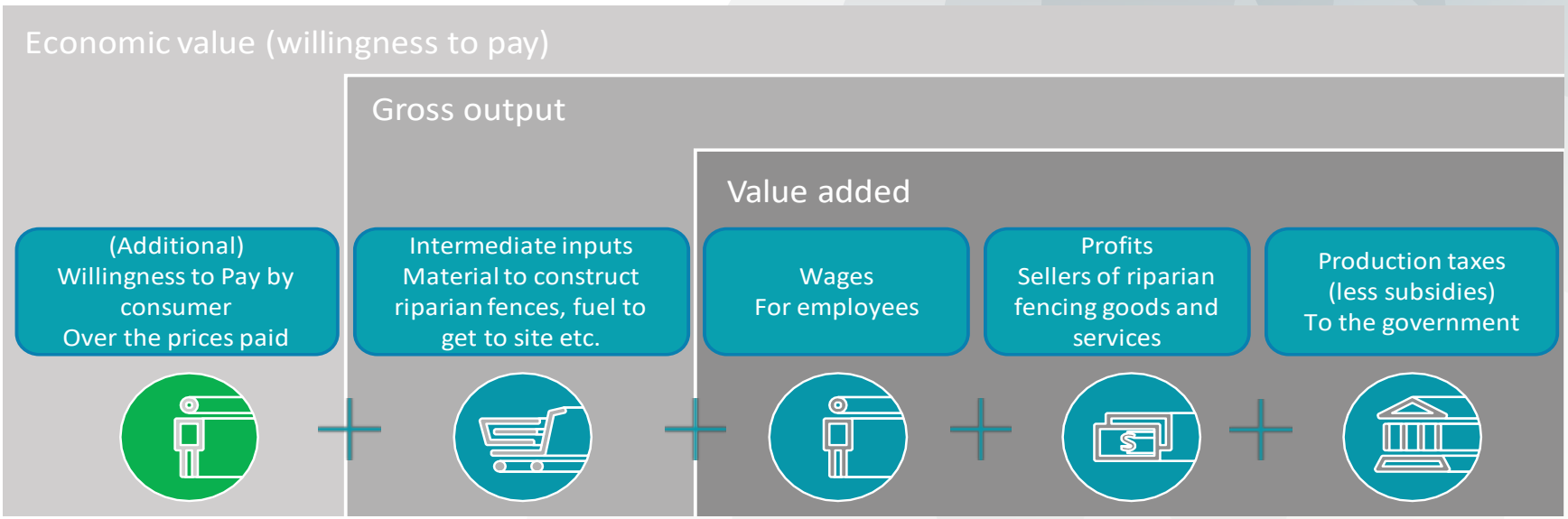
What's natural capital economic valuation?

Economic value is measured by willingness to pay (for the outcomes provided by a good or service).



What is natural capital economic valuation?

Willingness to pay can be reflected through observed market transactions for some, but not many, natural capital goods and services.

Improved commercial and residential property amenity near waterway and green infrastructure assets, reflected in house prices.

Shade from tree canopies and reduction in sun exposure, plus microclimate regulation

Energy cost savings in buildings through shading of walls and roofs from green infrastructure investments

Habitat for wildlife

Rainfall and stormwater interception and reuse, reducing stormwater and flooding

Active and passive recreation open space, contributing to health, wellbeing and productivity.

A sense of place and opportunities for cultural and community integration

Amenity and landscape aesthetics, including revitalising urban space

More attractive commercial and retail centres, contributing to higher commercial turnover

Carbon storage and sequestration

Air pollution amelioration

A connection to nature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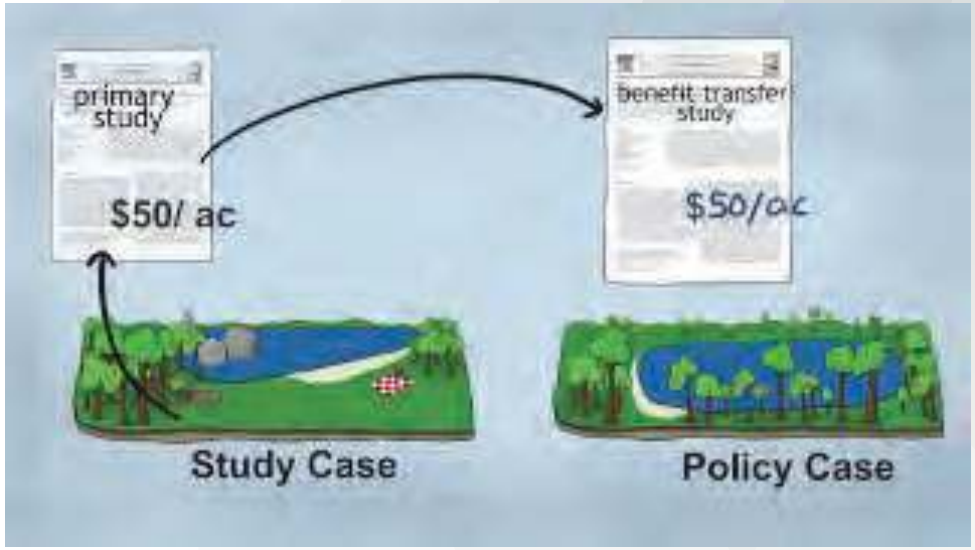
One slide on valuation methods

How we estimate natural capital economic values.

- Directly through markets (revealed preference)
- Imputed through behaviour (revealed preference)
- Directly through surveys and asking people (stated preference)
- Transferring values (value transfer)

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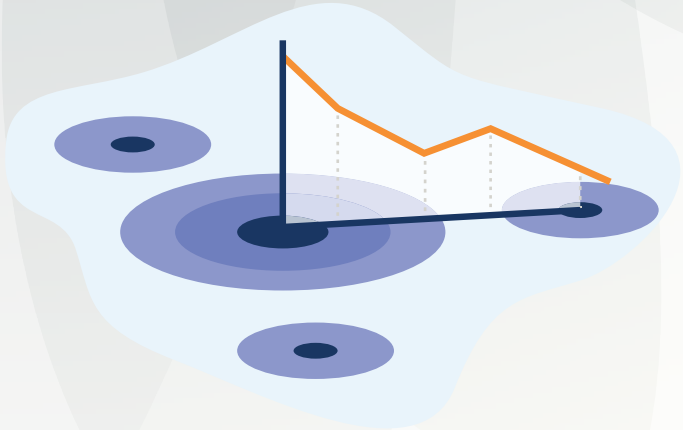
Trips and traps to look out for #1

NCEV should be commensurate.

- Are they stock (asset) or flow (service) values?
- Are they total, average, or marginal values?
- Are they short run and long run values?
- Are they source and at site impacts and values?
- Are they measuring asset value at the same end point?

NCEV are often non-linear, non-additive and have distance decay.

- With versus without – different to before and after.
- Impacts and values are (generally) not additive, substitution effects
- Distance decay means (use) values fall with distance.



Trips and traps to look out for #2

Transferring estimates from one context to another is likely very imprecise (and likely misleading) unless there is a high degree of similarity between the study and policy contexts (in terms of the environmental features, policy outcomes and population characteristics.

- Good value transfer requires expertise to do well. It's not just about selecting a number. Need to adjust for scale, scope, timing, population, uncertainty and other things. Adjustments have a material impact on benefit estimates.

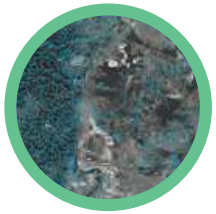
Avoid trips and traps by:

1. **Select 'good quality' studies**: peer reviewed, after 2000, source-site similarity (site and population with standing), large sample sizes.
2. **Minimise transfer errors**: type and extent of environmental change, substitution effects, distance decay effects, non-response rates, beyond-bounds transfer.
3. **Report value ranges not point estimates** and be clear on limitations.

Trips and traps to look out for #3

What you should be seeing in NCEV work, an example:

GIS Data
Condition and length of relevant waterway reaches

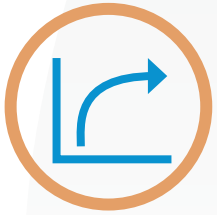


Households
Total number of households in population with standing

Waterways
Total length of waterways in the State

Household Willingness To Pay
Based on a meta-analysis of Australian household WTP for the improvement of major waterways (Rolfe et al.)

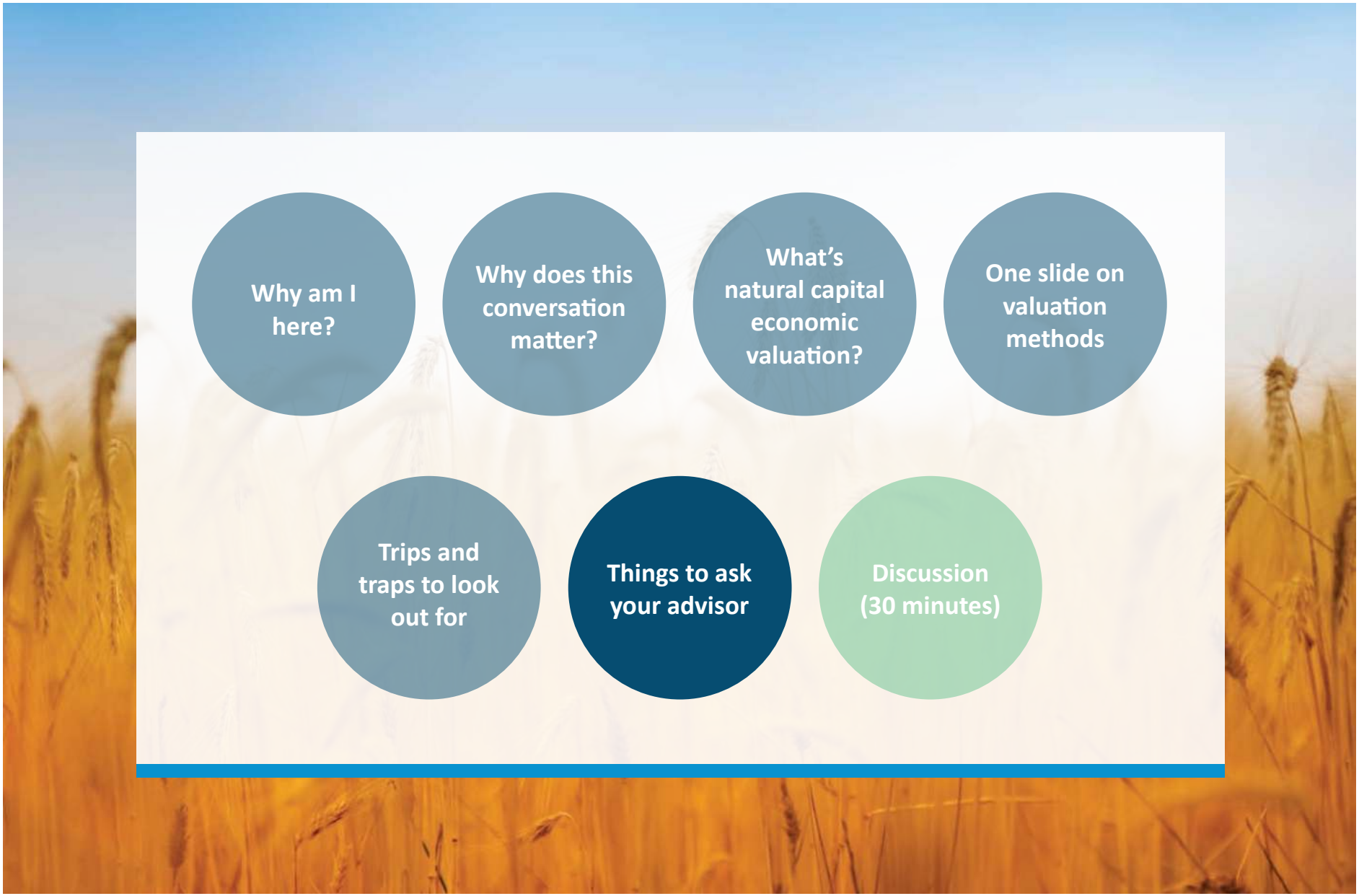
Household WTP is adjusted based on waterway quality, using meta-analysis transfer function



Household WTP is adjusted based on waterway length using transfer function adapted from Rolfe et. al.

Aggregation to population with standing, accounting for distance decay.

Waterway Economic Value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Things to ask your advisor

Are you experienced?

- Have you done peer-reviewed revealed or stated preference studies before?
- How have you made the values commensurate?
- How have you accounted for non-linearities, substitution effects, and distance decay?
- Are you estimating beyond bounds of the original study?
- What are the limitations in application? What do I need to know to defend this work as robust?
  - For stated preference studies, how have you adjusted for non-respondents and non-completes?
  - For values that have different timeframes to delivery, have you adjusted for implicit discounting?

Where to next?

Developing better practice standards.

- Developing better practice standards and agree better practice approaches and values to use. Standards should be peer reviewed by commercial advisors and academics.
- Get your work peer reviewed to give additional confidence.
- Don’t accept valuations just because they are the values we want to believe. Creates risk of undercutting later.


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Thank you

Next Marsden Jacob Talks Live

Water markets: helping farmers and the environment

Rod Carr
Director

Stuart Maclachlan
Senior Consultant

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