# Fenner Synthesis Workshop:
# **Environmental-economic accounts with Earth observation data**

**When**: Starts 9:00 am on Thursday 10 May, finishes 4:00 pm on Friday 11 May 2018

**Where**: Eucalyptus room, Floor 2
RN Robertson building
Biology Place
Australian National University
Access is via the Little Pickle coffee shop on Biology Place. Venue in google maps

**Organisers**:

- Fenner School of Environment & Society, Australian National University
- Australian Bureau of Statistics
- Australian Government Department of the Environment and Energy
- Geoscience Australia

**Background**

Environmental-economic accounting continues to receive attention as a robust means of measuring and reporting on our environment and to quantify the societal and economic benefits it generates. However, while the usefulness of environmental-economic accounts (EEA) is widely acknowledged, there remain several institutional and technical challenges to making environmental-economic accounting a reality for Australia.

Important among those challenges is the requirement for spatial data on different aspects of environmental composition and condition (e.g., land cover type, vegetation health) and the natural resources and other ecosystem services it provides (e.g., biomass, soil protection). The scientific literature shows that Earth observation should be able to provide at least some of these data in a cost-efficient manner, but it currently does not.

**Workshop objective**

This invitation-only expert workshop will bring together experts in (a) the use of environmental-economic accounting data, (b) the framing and production of EEA, and (c) satellite Earth observation of environmental variables. The goal is to identify the main constraints and opportunities to the better use of Earth observation in environmental-economic accounting.

Guiding themes of the workshop will be:

- *Reverse engineering* – what does 'account-ready' data need to look like? Starting with some concrete examples of the policy use of EEA, develop a shared understanding of the specific requirements for accounting data, and in turn, the characteristics of any data to be provided by Earth observation.
- *The Art of the possible* – what can Earth observation contribute? Developing a shared understanding of the current limitations of spatial information derived from Earth observation, which of those can be alleviated, and which are immutable for the foreseeable future.
- *Learning by doing* – environmental-economic accounting mashup. Based on the above, one or two application case studies will be selected and developed further. This will involve the

further definition of a selected EEA use scenario and the information requirements that can be derived from it; as well as the development of a set of trial accounts using any readily available spatial data derived from Earth observation.

**Premises**

To enable progress on this goal, the workshop will build on two premises:

(1) Commonwealth, state and territory environment ministers have recently agreed to a national approach to EEA following the broad and flexible System of Environmental-Economic Accounting and this will provide the framework for this workshop.

(2) There is an important role for spatial information derived from Earth observation at national scale and in a consistent manner to populate accounts.

These premises are to focus the workshop discussion and do not imply any exclusivity in reality. Indeed, it is expected that a national environmental-economic accounting effort would continue to be complemented and informed by environmental data and accounting approaches developed by local, regional and state governments, NGOs, and private industry.

**Workshop outputs**

The envisaged workshop output is a synthesis paper that summarises the common ground and useful principles and guidelines in the development of EEA informed by Earth observation data, and an agenda for the research and development activities needed to address remaining challenges.

**Workshop structure**

On Day 1 we aim to achieve a common understanding and vision, through presentations and facilitated discussion, whereas Day 2 will largely be dedicated to the further development of case studies, interspersed by a few technical presentations on past case studies. A more detailed program is provided further below.

**Logistics**

*Start*: The workshop will commence on Thursday 10 May at 9:00 am with coffee and tea for a sharp 9:30 am start.

*Catering*: Coffee, tea and lunch are catered.

*Parking*: nearest (paid) parking is behind the building (parking in google maps) which requires mobile payment via CellOPark and can be set up on the spot. Free parking with shuttle connection is also available.

For any further questions, please contact Rowena.Smith@anu.edu.au.

## Day 1: Deriving principles and guidelines for 'account ready' EO data

Objectives:

- Developing a shared understanding, including current policy concerns that can be supported by accounts; accounts already available and how/where they are developed; international experience, trends, initiatives and frameworks.
- Defining 'account ready' data: methodological data requirements; problems defined; existing and potential standards identified.
- Understanding and evaluating current EO data, products and services, and defining challenges and obstacles to the use of EO in accounts.
- Identifying opportunities and developing candidate trial accounts to be explored on Day 2.

| Time | Speaker | Topic |
|---|---|---|
| **9:00 for 9:30** | Arrive | |
| **9:30-10:45<br>1 hr 15 mins** | **Session 1. Introduction and scene setting** | |
| 5 mins | Albert van Dijk, ANU | Welcome |
| 10 mins | Beth Brunoro, DoEE | The emerging common national approach to EEA |
| 10 mins | Jacky Hodges, ABS | Earth observation and the ABS |
| 10 mins | Steve Hatfield-Dodds, ABARES | An EEA user perspective |
| 20 mins | François Soulard, Statistics Canada | Earth observation and EEA in Canada |
| 20 mins | Panel Q&A | |
| 10:45 – 11:15<br>30 mins | Morning tea | |
| **11:15-12:30<br>1 hr 15 mins** | **Session 2. What does 'account-ready' data need to look like?** | |
| 15 mins | Ric Clarke, ABS | The National Statistical Office methodology |
| 15 mins | Jacinta Holloway, QUT | Case study in the use of Earth observation data in EEA |
| 45 mins | Breakout discussion | Given data requirements, where are the biggest opportunities and challenges likely to be? |
| 12:30 – 13:30<br>1 hr | Lunch | |
| **13:30-15:00<br>1 hr 30 mins** | **Session 3. What can Earth observation contribute?** | |
| 15 mins | Albert van Dijk | Australia's Environment: an EO-driven attempt at EEA |
| 15 mins | Adam Lewis, Geoscience Australia | From analysis-ready EO data through to account-ready data |
| 60 mins | Breakout discussion | Where are the EO data priorities and what would need to happen? |
| 15.00 – 15.30<br>30 mins | Afternoon tea | |

| **15:30-17:00**<br>**1 hr 30 mins** | **Session 4. Defining problems and barriers, setting up problem solving** | |
|---|---|---|
| 15 mins | Shanti Reddy, DoEE | EO in the National Carbon Accounting System |
| 10 mins | Mark Eigenraam, IDEEA Group | Challenges in using EO data in EEA |
| 40 mins | Breakout discussion | Defining a practical pilot EEA experiment |
| 25 mins | Summarising plenaries | |
| 17.00 | Close | |
| 17:00-17:30 | Drinks & Canapes | |

## Day 2: Exploratory Trial Accounts and Case Studies

Objectives:

- Working groups to explore decision points around account-readiness EO data such as design assumptions and scaling, and plan one or more trial accounts.
- Developing trial accounts, or associated inputs or outputs, using existing EO and statistical data to test understand data requirements, production and utilisation

| **Time** | **Speaker** | **Topic** |
|---|---|---|
| 9.00<br>15 mins | Albert Van Dijk, ANU | Recap Day 1 and introduction of Day 2<br>Logistics for the day |
| 15 mins | Plenary | Defining the projects and working group formation |
| 45 mins | Workshop session | |
| 10:45 – 11:00<br>15 mins | Morning tea | |
| 5-10 mins | Presentations - TBC | |
| 1 hr 15 mins | Workshop session | |
| 10 mins | Session feedback | |
| 12:30 – 13:30<br>1 hr | Lunch | |
| 5-10 mins | Presentations - TBC | |
| 1 hr 40 mins | Work session | |
| 30 mins | Session feedback & Summary | |
| 15:20 | Close | Albert van Dijk, ANU |
| 15:30 – 16:00<br>30 mins | Afternoon tea | |

## Participants list

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|---|---|---|
| Adam | Lewis | Geoscience Australia |
| Albert | Van Dijk | ANU Fenner School of Environment & Society |
| Alex | Held | CSIRO, Terrestrial Ecosystem Research Network |
| Alexis | McIntyre | Department of the Environment and Energy |
| Becky | Schmidt | CSIRO |
| Beth | Brunoro | Department of the Environment and Energy |
| Bruce | Doran | ANU Fenner School of Environment & Society |
| Carl | Obst | Institute for Development of Environmental-Economic Accounting |
| Celine | Steinfeld | Wentworth Group |
| Dale | Roberts | ANU Research School of Finance, Actuarial Studies & Statistics |
| David | Rankin | Australian Bureau of Statistics |
| Francois | Soulard | Statistics Canada |
| Graciela | Metternicht | UNSW |
| Heather | Keith | ANU Fenner School of Environment & Society |
| Jacinta | Holloway | Queensland University of Technology |
| Jacky | Hodges | Australian Bureau of Statistics |
| James | Bentley | National Australia Bank |
| Jane | Stewart | ABARES |
| John | Leys | Office of Environment and Heritage |
| Kristen | Williams | CSIRO Land and Water |
| Lalage | Cherry | Department of the Environment and Energy |
| Leo | Lymburner | Geoscience Australia |
| Lisa | Wardlaw-Kelly | Australian Bureau of Statistics |
| Liz | Milewicz | Australian Bureau of Statistics |
| Lucy | Randall | ABARES |
| Luigi | Renzullo | ANU Fenner School of Environment & Society |
| Marie-Chantale | Pelletier | NSW Office of Environment and Heritage |
| Mark | Eigenraam | Institute for Development of Environmental-Economic Accounting |
| Marta | Yebra | ANU Fenner School of Environment & Society |
| Matt | Miles | Department of Environment, Water and Natural Resources, SA |
| Mike | Booth | Australian Bureau of Statistics |
| Norman | Mueller | Geoscience Australia |
| Peter | Burnett | ANU College of Law |
| Peter | Meadows | Australian Bureau of Statistics |
| Ric | Clarke | Australian Bureau of Statistics |
| Richard | Dunsmore | Australian Bureau of Statistics |
| Richard | Mount | Australian Bureau of Statistics |
| Rosemary | Bissett | National Australia Bank |
| Sarah | Buchan | Mullion Group |
| Shanti | Reddy | Department of the Environment and Energy |
| Shaun | Copley | Australian Bureau of Statistics |
| Simon | Barry | CSIRO Data61 |
| Steve | Hatfield-Dodds | ABARES |
| Steve | Dovers | ANU Fenner School of Environment & Society |
| Steve | May | Australian Bureau of Statistics |
| Stuart | Phinn | University of Queensland |
| Sue | Ogilvy | Australian National University |

## References

***Key references and resources***


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***Other relevant references***


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