

A Bird's Eye View of H5N1

A cross-disciplinary conversation on what the arrival of H5N1 bird flu means for the Murray-Darling Basin, and for the living systems the region's health and prosperity quietly rest on.

The views, information, or opinions expressed herein are solely those of the individuals involved and don't necessarily represent those of the AWS, WaterRA, One Basin or their employees.



A collaboration with:



Acknowledgement of Country



We acknowledge and pay respect to the Traditional Owners of the Murray–Darling Basin and their Nations.



We invite you to write in the **chat** now and acknowledge the Traditional Owners of the location you're joining from today.

Our vision and purpose



Vision

- Australia's irrigation regions are the most productive, resilient and sustainable in the world.

Purpose

- We work together to grow value from water in a changing world.



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Today's presenters



Ariella Helfgott
*Adelaide
University*



Craig Wilkins
*Murray Darling
Conservation
Alliance*



Kevin Slavin
Fairfield Bio



Geoff Reid
One Basin CRC



Neville Crossman
One Basin CRC

H5N1 bird flu is more than a wildlife disease

It is a threat to Country, culture, food, kinship and responsibility.

Geoff Reid
First Nations Engagement Lead
First Nations MER Lead – Flow-MER



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We pay respect to the Traditional Owners of the lands and the waters upon and around which our organisations are situated.

We acknowledge their deep cultural, social, spiritual, environmental and economic connection to their lands and waters. We pay respect to their Elders - past, present and future.

When birds are harmed, cultural systems are harmed



Spiritual

Birds can be Totems, Ancestors, messengers and part of ceremony, story and identity.

Physical

Wild birds and eggs remain food sources in some communities. Disease can affect access, confidence and food security.

Ecological

Birds pollinate, spread seed, control insects and connect land, water and sea Country.

Birds carry culture and obligation



Caring for birdlife is caring for Country

First Nations knowledge comes from long observation of seasons, breeding, movement, behaviour and change. That knowledge must sit alongside veterinary science, ecology and public health.

Migratory birds connect Countries across oceans



DEPARTURE

FLYWAY

RETURN

Generational knowledge

Arrival times and seasonal signs are remembered and passed on.

Shared responsibility

Birds cross many Countries and national borders; no single place can protect them alone.

Relationships continue

The birds return carrying ecological connections that are thousands of years old.



First Nations people may be the first to see the signs



Early warning from Country

Rangers and community members are regularly on remote land, wetlands, islands and sea Country.

Their observations can support early warning but responsibility must come with resources and authority.



Observe and report

Recognise unusual illness or deaths, keep distance, record details and use agreed reporting channels.



Equip and train

Fund role-specific training, PPE, clear protocols and trusted local contacts before an incident.



Respect Country

Follow cultural authority, access permissions and protocols for places, knowledge and significant species.

Preparedness must be designed with First Nations people now



Plan with us

Include Traditional Owners, cultural authorities and ranger organisations in governance and local response plans.

Invest before crisis

Fund training, PPE, surveillance, communications and culturally appropriate resources.

Share decisions

Combine First Nations knowledge and Western science, with consent, authority and two-way communication.



Protecting birds is protecting Country



Listen early

Prepare together

Act with respect

Thank you



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Murray-Darling
Conservation
Alliance

H5N1 Bird Flu in the Murray-Darling

Craig Wilkins | August 2026

Our Alliance

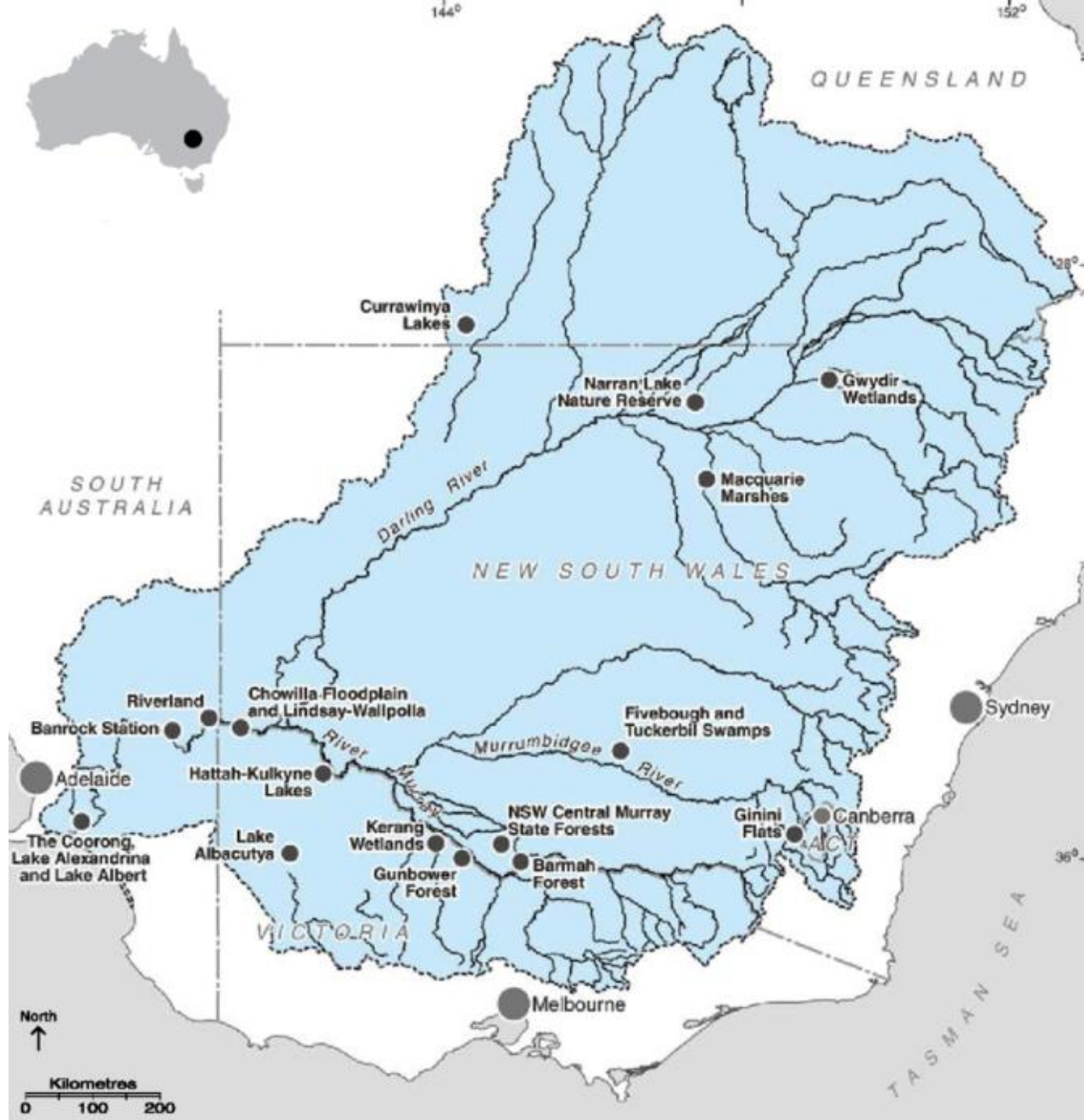


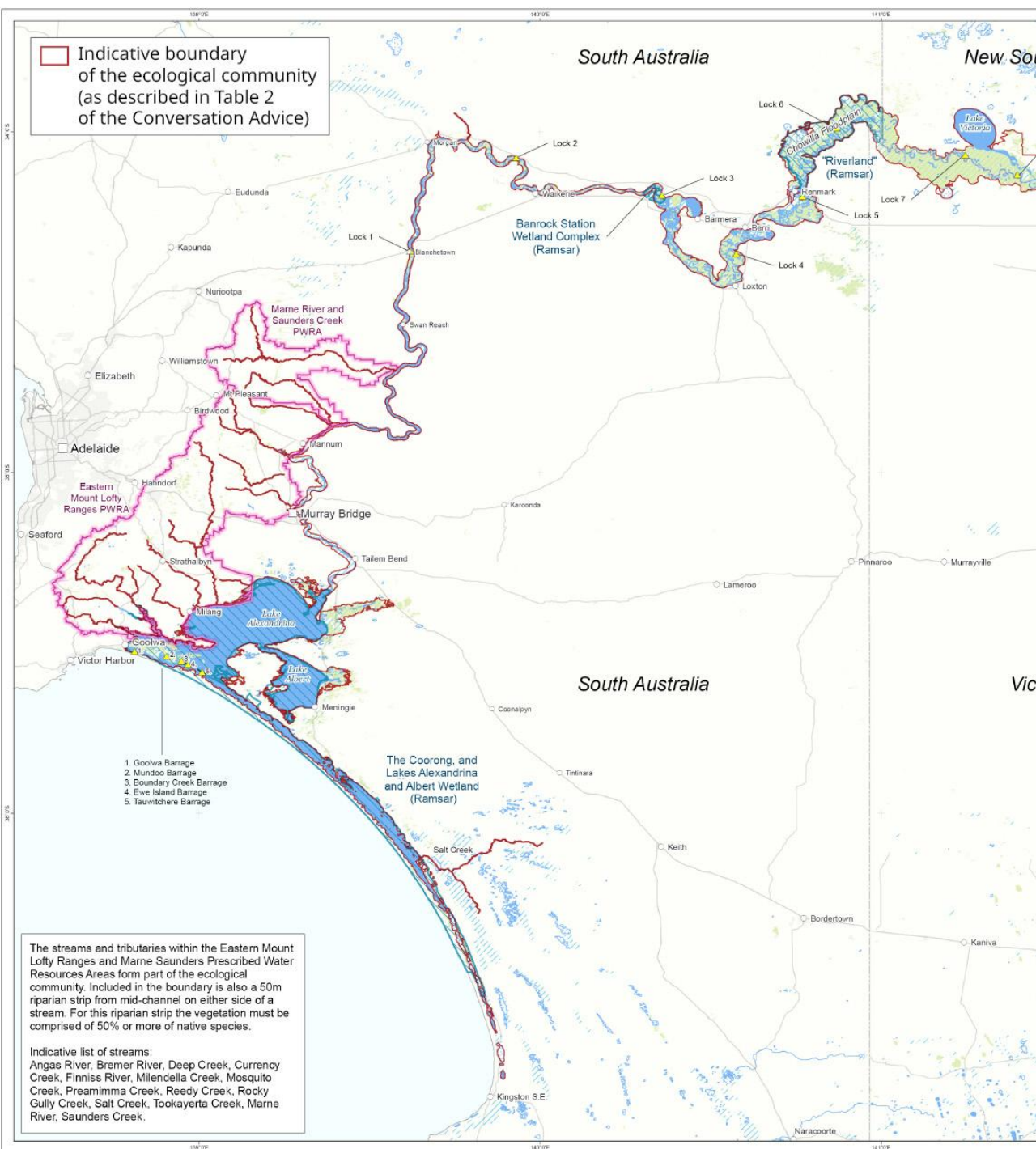
WENTWORTH GROUP
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River Murray & Macquarie Marshes

The River Murray (Darling to sea) has been declared a 'Critically Endangered' Threatened Ecological Community.

Here's what it means >

A trickle, not a flood: environmental watering in the Murray–Darling Basin, Australia

Yiwen Chen ^{A,B}, Matthew J. Colloff^A, Anna Lukasiewicz^A and Jamie Pittock^A

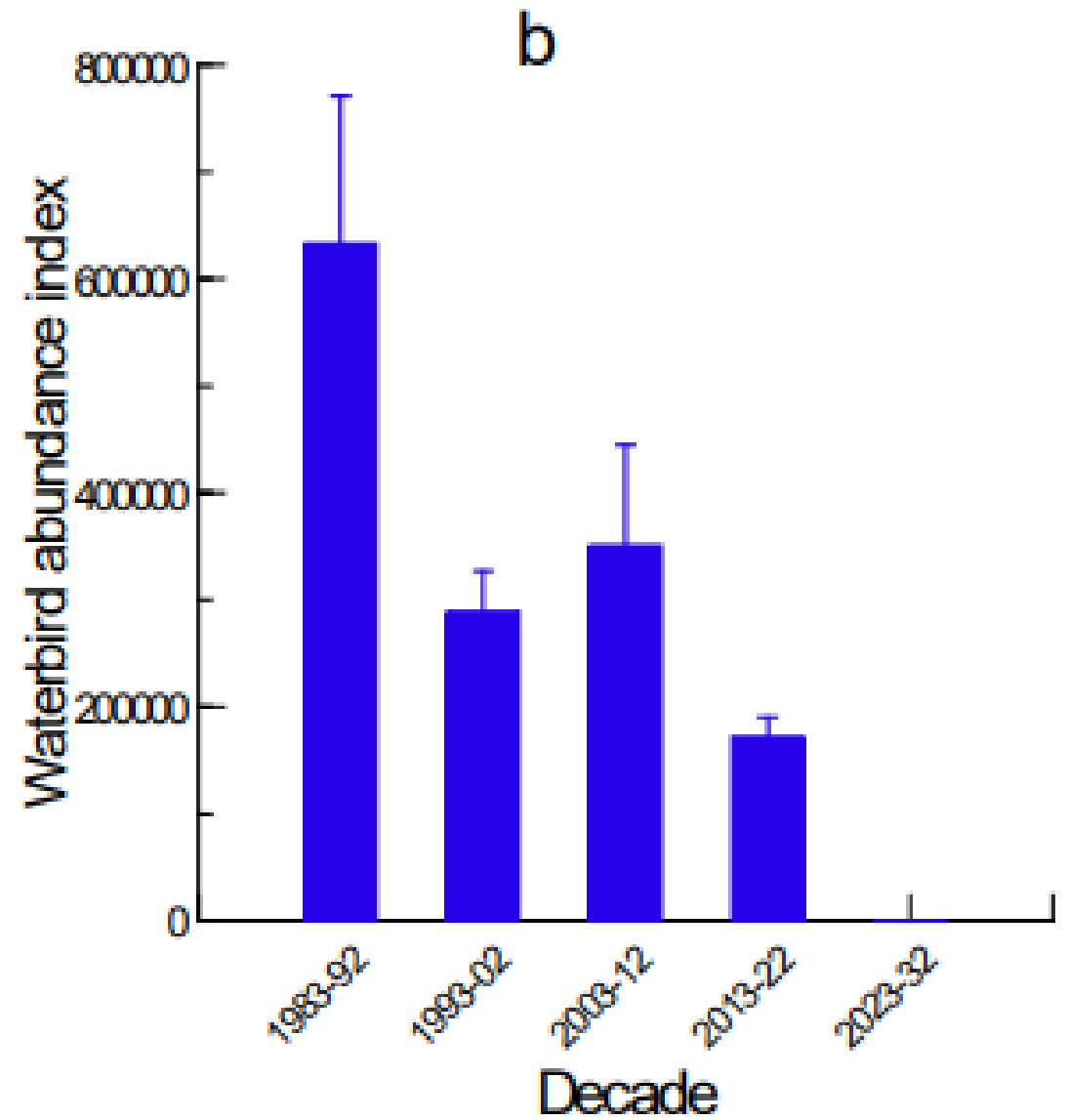
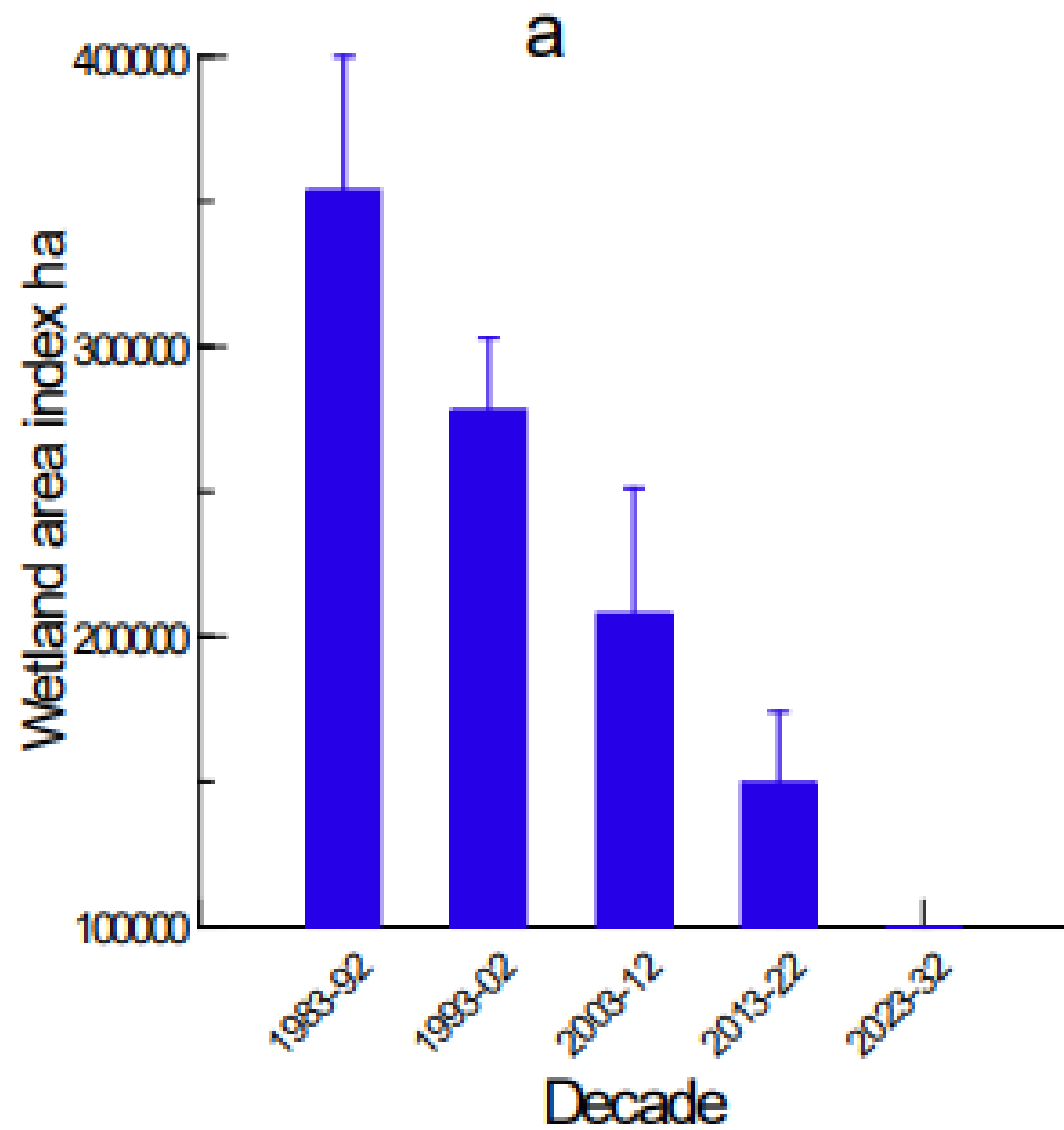
^AFenner School of Environment and Society, The Australian National University, Building 141, Linnaeus Way, Canberra, ACT 2601, Australia.

^BCorresponding author. Email: evechen1996@gmail.com

Abstract. Environmental flows are an integral component for the conservation and management of rivers, flood plains and other wetlands in the Murray–Darling Basin. Under the Basin Plan, environmental water is managed by the Commonwealth Environmental Water Office (CEWO) and the states. We assessed CEWO environmental flows (2014–15 to 2018–19), compared our findings with expected outcomes for vegetation in the Basin-wide Environmental Watering Strategy (EWS) and interviewed water managers about the efficacy of environmental watering. Some 21% of CEWO water was delivered as flood events, to 9 of 19 river valleys, inundating 7% of wetland area in those valleys annually and 0.8% of major Basin wetlands. A consistent pattern was the watering of many small wetlands on the South Australian Murray with small volumes (median area 43 ha, volume 125 ML). Just 12% of the area of river red gum subject to EWS expected outcomes was flooded, and half these events were likely suboptimal to achieve ecological benefits. Wetlands have not received the water they need and vegetation outcomes cannot be met by completion of the Plan in 2024. Rules that constrain flooding of private land must be relaxed if the Plan is to achieve its statutory requirement of wetland conservation.

Keywords: adaptive management, environmental flows, environmental water accounting, floods, mixed methods, Murray–Darling Basin Plan, triage, water policy, wetlands.

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An aerial photograph of a wetland area. A narrow, dark waterway winds through patches of tall green grass. Several red kayakers are visible on the water, moving along the path. The text '3 Vital Actions' is overlaid in white on the right side of the image.

3 Vital Actions

1. Strengthen Viable Breeding Events
2. Protect & Restore Wetlands
3. Remove & Reduce Threats



An aerial photograph of a wetland area. The water is dark and still, interspersed with patches of green grass and reeds. Several red kayakers are visible on the water, some in groups and some alone. The kayakers are small in the frame, emphasizing the vastness of the wetland.

Key Takeaway

- Healthy birds stand a better chance of survival
 - Wetlands are essential for bird health
- We need more water on more wetlands, more often



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- Healthy birds stand a better chance of survival
 - Wetlands are essential for bird health
- We need more water on more wetlands, more often
- **This is a no regrets investment!**



Economic considerations of bird flu (H5N1)

Professor Neville Crossman
Program Leader (Adaptation and Innovation) – One Basin CRC

Professorial Research Fellow in Economics – Flinders University



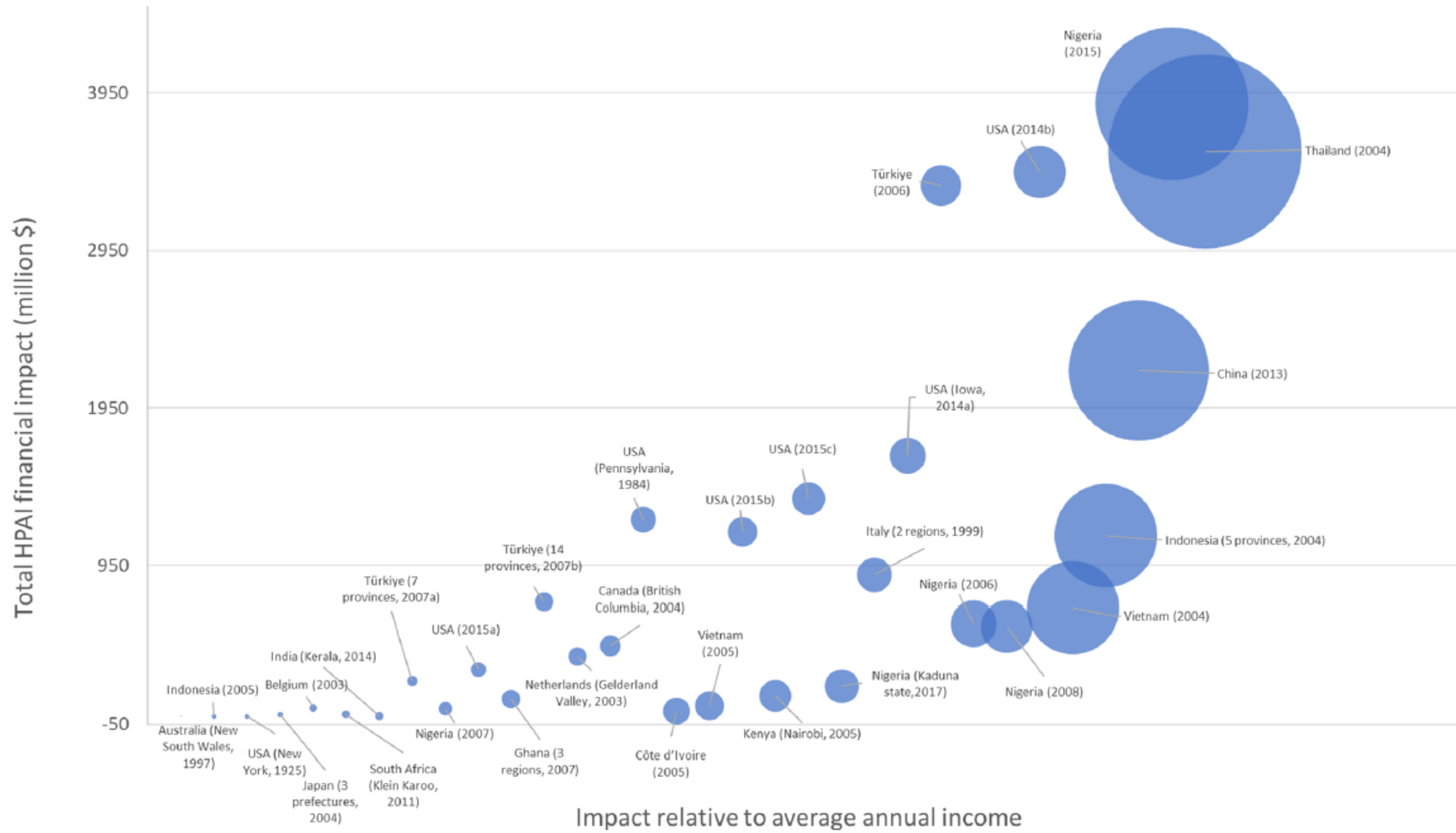
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Types of economic impacts of highly pathogenic avian influenza (H5N1 & others)

Sector	Definition
Poultry industry	Impacts to poultry and related sectors including poultry farms, hatcheries, slaughterhouses and input suppliers
Government (agriculture and veterinary services)	Costs to public agricultural and veterinary institutions including biosecurity & primary industries ministries, veterinary authorities & services, regulatory authorities and national laboratories
Public health	Costs to public health sector including to hospitals, broader societal impacts and increased demand on health services
Other businesses	Impacts to non-agricultural sectors such as insurance, tourism, transport, retail and food services
Environment	Impacts to wildlife populations and biodiversity and associated economic values of ecosystem services

Size of economic impacts in other countries



Value of Australian chicken meat industry

Table 1: Total economic contribution of the chicken meat industry, FY23.

Total chicken meat industry	Direct	Indirect	Total
Value added (\$m)	2,481	5,556	8,037
<i>including</i>			
Gross operating surplus (\$m)	1,038	3,676	4,714
Labour income (\$m)	1,443	1,880	3,323
Employment (FTEs)	19,004	33,688	52,692

Source: Deloitte Access Economics (2025). Economic contribution of Australia's chicken meat industry. AgriFutures Australia

Note: Commercial chicken meat and egg production are currently completely free of H5 avian influenza and eggs and chicken are safe to eat. Poultry industry is putting in place strong biosecurity practices.

Ecosystem service values at risk from bird flu in the Murray-Darling Basin

Ecosystem service	Description	Value examples	Source
Tourism & Recreation	Reduced visits to natural habitats	Tourist expenditure estimated at \$15 billion per year	MDBA (2024)
Tourism (bird watching)	Reduced expenditure by bird watchers	%15 increase in ecosystem health worth up to \$20,000/yr at key sites	Smart et al (2026)
Wetland habitat	Loss & degradation of habitat	\$13 billion community willingness to pay for environmental improvements	Hatton MacDonald et al. (2011)
Spiritual and Cultural	Degradation of culturally significant sites and loss of traditional practices.	Very hard to estimate monetary value	

Annual birdwatching expenditure at Murray-Darling Basin hotspots

Hotspot	Total annual BuD count 2018	Extrapolated non-eBirder visit days in 2018	Total annual extrapolated birdwatching expenditure in 2018 (\$1000s)
1.Barmah Murray Valley National Parks	84	32	11.4
2.Bowra Wildlife Sanctuary	398	153	54.2
3.Lake Cargelligo	110	42	15.0
4.Fivebough Swamp and Tuckerbill Wetland	69	26	9.4
5.Gum Swamp	44	17	6.0
6.Hattah Kulkyne National Park	288	111	39.2
7.Kerang Wetlands	237	91	32.3
8.Macquarie Marshes Nature Reserve	31	12	4.2
9.Shepparton	329	126	44.8
10.Wonga and West Albury Wetlands	136	52	18.5

Predicted increase in annual birdwatching expenditure with increase in ecosystem health

