CENTRE FOR
INVASIVE SPECIES SOLUTIONS

The illegal wildlife trade (IWT) is one of the largest and most prolific global black markets, with a conservative estimated value of US$20-200 billion. Not only does illegal wildlife trade drive unsustainable harvest of wildlife from their native range, it also facilitates global pathways for invasive species and zoonotic diseases. The rapid increase in wildlife trade is largely facilitated by e-commerce online platforms that connect millions of potential users across multiple legal jurisdictions, often providing an anonymised means of conducting trade without fear of detection or regulatory oversight.

66 Approximately 9000 wildlife related products are listed for sale on Australian e-commerce platforms each week, 99

Many of the wildlife related products are non-native (alien) and/or do not comply with existing legislation (either deliberately or unintentionally). For example, there are a large diversity of alien species, particularly ornamental fish and cagebirds, that are traded domestically within Australia without

any regulatory mechanisms, despite posing clear biosecurity risks (both as invasive species and as vectors for novel pathogens).

Elsewhere, **Australian endemic species face serious conservation threats from illegal poaching fuelled by international demand and the exotic pet trade.** The lack of international regulation (that is, through the Convention on International Trade in Endangered Species of Wild Fauna and Flora) of most endemic species means their overseas trade persists, despite it being illegal to export them from Australia. The diversity of species affected by illegal trade is growing and includes vulnerable range-restricted or declining species.

Both the domestic trade of high-risk alien species and the international trade of threatened endemic species are poorly documented and understood. This lack of knowledge compromises Australia's capacity to anticipate trade-based threats and to make evidence-based management recommendations. Currently, trade occurs at scales far outpacing the capacity for manual surveillance. Fortunately, recent advances in automated surveillance techniques such as data mining and natural language processing provide an opportunity to quantify the diversity and scale of online trade.

Invasive species spread

New alien species in Aus

Sourcing new alien species

Native species decline

Declining natives traded

Demand for Aus wildlife

The University of Adelaide, in collaboration with the Centre for Invasive Species Solutions, have developed webscraping tools to monitor domestic and international e-commerce sites for the online trade of wildlife; including private forums and dark web marketplaces. These tools can store historical data as well as providing search features for real time trade. There exists substantial potential to adapt these tools to combat biosecurity and biodiversity threats from illegal wildlife trade.

Digital surveillance of Illegal Wildlife Trade (DIWT)

“ DIWT (2022) is a prototype webtool project developed in collaboration between the University of Adelaide and the Centre for Invasive Species Solutions, and in consultation with the intergovernmental Environment & Invasives Committee. ”

DIWT's key features include: (i) full coverage of a large number of e-commerce classifieds, online pet stores, and lost and found sites (currently 88 sites); (ii) international coverage of Australian trade in alien and native species (currently Australia, United States, Europe, Japan); (iii) broad taxonomic coverage (vertebrates, invertebrates, plants) with standardised nomenclature and capability to match and collapse synonyms and trade names; (iv) historical data collection since July 2019 (currently 6.3 million unique advertisements) with around 40,000 new advertisements per week; (v) targeted collection of key fields including: species name, text description, price, quantity, location, date, username, and photographs; (vi) user-friendly secure website interface for search functions and automated email alerts.

Further reading:

Stringham, O.C., et al. (2021). A guide to using the Internet to monitor and quantify the wildlife trade. *Conservation Biology*, 35: 1130.

Stringham, O.C., et al. (2021). Text classification to streamline online wildlife trade analyses. *PloS one,* 16: e0254007.

Toomes, A., et al. (2020) Australia's wish list of exotic pets: Biosecurity and conservation implications of desired alien and illegal pet species. *NeoBiota,* 60: 43.

Stringham, O.C., et al. (2021). Live reptile smuggling is predicted by trends in the legal exotic pet trade. *Conservation Letters*, 14: e12833.

Stringham, O.C., et al. (2021). Dataset of seized wildlife and their intended uses. *Data in brief,* 39: 107531.
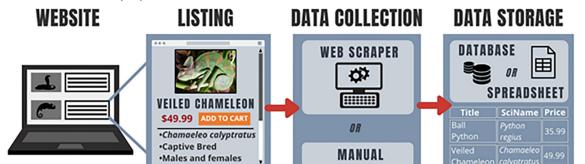
Toomes, A., et al. (2022). Drivers of the Australian native pet trade: the role of species traits, socioeconomic attributes and regulatory systems. *Journal of Applied Ecology*, DOI: 10.1111/1365-2664.14138.

Bottom image: Gargoyle Gecko by Adam Toomes

WEBSITE → **LISTING** → **DATA COLLECTION** → **DATA STORAGE**

VEILED CHAMELEON
$49.99 ADD TO CART
• *Chamaeleo calyptratus*
• Captive Bred
• Males and females

WEB SCRAPER OR MANUAL

DATABASE OR SPREADSHEET

Title	SciName	Price
Ball Python	*Python regius*	35.99
Veiled Chameleon	*Chamaeleo calyptratus*	49.99