

## NEWS FROM THE UNIVERSITY OF TASMANIA, AUSTRALIA

# Media Release

## Chiefs of Staff, News Directors

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### Conservation planning essential as nature moves with climate change

A range of international climate assessments have confirmed that global biodiversity is changing in response to shifts in regional climate – and environmental managers must carefully evaluate options critical to the survival of some species.

Plymouth University's Professor Camille Parmesan used her keynote speech at the inaugural international conference Species on the Move, which opened in Hobart today, to highlight impacts that are already being observed in terrestrial, marine and freshwater systems.

"The global imprint of warming on life is evident in hundreds of scientific studies," Professor Parmesan said.

"While about half of all studied species have changed their distributions in response to recent climate change, we are starting to see negative impacts for the most vulnerable species."

In every system, diverse wild species have responded to increases in annual and seasonal temperatures, changes in patterns and amounts of rainfall and snow, and increases in frequencies of extreme heat events in the ocean and on land.

Professor Parmesan said the most impacted species to date are those occurring solely in the most sensitive systems or which have already been highly impacted by other anthropogenic stressors such as habitat loss or pollution.

"Recovering these vulnerable species under a changing climate may not always be possible.

"But where there is potential for recovery, robust conservation planning requires that we not only acknowledge and address threats and habitat needs of the past, but also anticipate and prepare for changing threats and needs, looking forward into future decades."

Providing an overview of responses to climate change, Professor Parmesan said:

- About half of studied species have shifted their geographical ranges poleward (50-1,600km) and/or upward (up to 400m in elevation);
- About two-thirds of species studied have shifted towards earlier spring breeding, migrating, blooming;

- Every major group studied has been affected - trees, herbs, butterflies, birds, mammals, amphibians, corals, invertebrates, fish, marine mammals & plankton; and
- New research documents complex responses and indicates that prior studies have underestimated the proportion of species impacted by climate change.

Over the next three days the 250 delegates to the conference from 40 countries will hear the results of Australian studies where documented impacts include climate-change driven range extensions in at least 70 fish species and other animals, such as octopus and sea snails, and a southward colonisation of sea urchins in eastern Tasmania.

Changes have also been detected in the timing of life-cycle events such as migration and breeding in birds and population declines as a result of heat stress and droughts in koalas, wetland birds and platypus.

Some species have already shifted their geographical ranges and smaller average body sizes have been noted in some bird species.

Mass die-off events have been recorded in flying foxes and the endangered Carnaby's cockatoo during days of extreme heat.

In reptiles, a change in the offspring sex ratio has also been related to increasing temperatures.

The conference is being hosted by the University of Tasmania and the Institute for Marine and Antarctic Studies.

More information: <http://www.speciesonthemove.com/>

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