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Tasmanian Little Penguin study casts
light on foraging behaviour

A study of Little Penguins in south-eastern Tasmania has shed light on how the
marine predators adapt to subtle changes in environmental conditions to find food.

To record their foraging behaviour, Little Penguins from three colonies around
Storm Bay were fitted with GPS trackers by a team of IMAS and CSIRO researchers.

The study, published in the journal Marine Ecology Progress Series, is the first to
provide information on how Tasmanian Little Penguins behave at sea.

It found the birds remain relatively close to the coast, exhibit a high level of
variability between colonies while accessing a wide variety of sites, and are finely
attuned to environmental influences such as water depth, salinity and temperature.

The study’s lead author, former IMAS Honours student Lachlan Phillips, said
conditions in Storm Bay are highly variable and affected by a wide range of factors,
including the East Australian Current, cold sub-Antarctic waters in winter, and
fresh water from the Derwent and Huon rivers.

“We wanted to see how Little Penguins from three separate colonies adjusted their
foraging behaviour to the varying conditions they experience,” Mr Phillips said.

“Previous studies have looked at how environmental conditions influence marine
predator behaviour on a broad scale but little is known about the impact of
localised factors, such as those in complex environments like Storm Bay.

“We put GPS tags on 29 Little Penguins from colonies near Kingston and on Bruny
and Wedge islands and collected data at a one to two-kilometre resolution every
hour, before removing the trackers after 24-hours.”

Mr Phillips said penguins from the three sites behaved quite differently while
foraging and their behaviour was influenced by distinct environmental variablefore removing the trackers after d.04 Tf<95.3(onm)6(ent)3(a)3(l)11( )-6(v)5(a)3(r)-7(i)11(a)3(b)-6(l)11(efor)4(e r)5(em)4(ov)3(i)16T

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longest trip duration and adapted their behaviour in line with water depth,” Mr
Phillips said.

Co-author IMAS Associate Professor Mary-Anne Lea said the variations in
conditions experienced by penguins affect the distribution of their prey.

“When foraging, marine predators need to respond to environmental conditions in
order to locate their preferred food,” Associate Professor Lea said.

“For example, cold ocean eddies and river mouths are associated with high levels
of nutrients that support phytoplankton and therefore attract fish that penguins
prey on.

“Cooler and less saline sub-Antarctic waters are preferred by a species of krill
found in southern Australian waters, which in turn also attract fish and penguins.

“As conditions change in highly variable and complex environments such as Storm
Bay so too do the locations where Little Penguins can find food.

“Penguin foraging behaviour is also affected by other factors, such as colony
location and their breeding cycle.

“Studies such as this highlight the significance of fine-scale environmental
variability in determining the foraging behaviour of marine predators such as
penguins,” Associate Professor Lea said.

Associate Professor Lea said getting a more complete understanding of penguin
activity and behaviour around Tasmania would require longer-term research to
study colonies across the State.

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