

Solitary dolphin socializes with harbour porpoise companions in the Clyde

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Kylie the dolphin with a harbour porpoise. Credit: Clyde Porpoise

A dolphin which has lived alone in the Firth of Clyde for at least 17 years appears to have found company in local harbour porpoises.

The short-beaked common dolphin, nicknamed Kylie by local people, has made his home around a navigational buoy between Fairlie and Cumbrae, likely after getting lost from his group.

The Firth of Clyde is not commonly visited by dolphins of this species and so the solitary cetacean has mostly been exposed to sounds produced by other species, especially the harbour [porpoise](#).

Kylie appears to have clicked with his cousins having been frequently seen in the company of a harbour porpoise, although not always the same individual, since at least 2004.

Research now suggests he appears to have learnt to produce sounds similar to those of the harbour porpoises.

The clicking sounds that common dolphins use for echolocation to navigate and hunt are understudied but available data suggests they are broadband and have peak frequencies below 100 kilohertz (KHz). They also produce other sounds for communication purposes including whistles and barks.

Harbour porpoises, on the other hand, only produce narrow-band high-frequency echolocation clicks with peak frequencies around 130KHz. The clicks are used for travelling and foraging, as well as communication purposes.

University of Strathclyde PhD research student Mel Cosentino has been studying audio recordings of the vocalisations of Kylie, both when he is alone and when he interacts with porpoises.

These recordings were made by David Nairn and volunteers from the Clyde Porpoise CIC using two towed underwater microphones and individual dolphin and porpoise echolocation clicks were extracted for analysis using a custom-built algorithm.

The results, as yet unpublished, show Kylie regularly produces clicks with peak frequencies over 100KHz, reaching over 130KHz, when accompanied by [harbour porpoises](#), much more often than when he is alone. Other sounds recorded include buzzes but no whistles.

No changes in the porpoise acoustic repertoire were detected.

Ms Cosentino said: "Several cetacean species, such as bottlenose [dolphins](#), belugas and killer whales, have the ability to change their acoustic repertoire as a result of interactions with other species."

"This vocal learning ability has mainly been observed in captive individuals and few cases have been reported for wild cetaceans."

Ms Cosentino aims to gather and analyse more recordings of the dolphin when alone to verify her findings and submit them for peer-review, but the initial results suggest the dolphin is changing its acoustic repertoire, likely as a result of interactions with the porpoises.

Ms Cosentino added: "If further analysis shows this to be the case, it would be the first time a common dolphin, either in captivity or the wild, has demonstrated an ability for production learning, where it has learned to imitate another species."

Provided by University of Strathclyde, Glasgow

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