Azure Kingfisher commensal behaviour

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This note is about the commensal relationship between the Azure Kingfisher *Ceyx azureus* and people fishing (including my own observations) on several bodies of water within the Hunter Region of NSW, Australia and further west: Glennies Creek Dam, Singleton; Williams River, Clarence Town; Wallis Creek, Buchanan; Woodlands Estate Reserve, Thornton; and Bywondah Fishing Retreat, Ogunbil.

The Azure Kingfisher is one of Australia's two river kingfishers (a group of Afro-Asian birds which specialise on aquatic invertebrates and small fish). The river kingfishers are piscivorous meaning they eat fish (and they also eat aquatic invertebrates). Its foraging behaviour has been described as poorly known (Higgins 1999). However, birds often catch food by plunge-diving from a perch above water (Strahan 1994; Higgins 1999) and sometimes by a sally-hover technique (Forshaw & Cooper 1983). Although Higgins also commented that it did not allow close approach by people, this has not been the case during observations by myself and others when an opportunistic foraging opportunity arose. In all cases, the close contact was initiated by the kingfisher. The above-mentioned sally-hover technique has been documented in Pied Kingfisher *Ceryle rudis* and Common Kingfisher *Alcedo atthis* across Africa and Asia (Douthwaite 1976; Tsang & Jianzhong 2006; Ng 2017).

Over the last 18 years, I have had numerous encounters with Azure Kingfishers while fishing in creeks and rivers around the Hunter Region (and beyond) during both day and night. Usually when I have encountered these quiet, unassuming birds, I have been fishing quietly near a bank and they have become confiding. Some of my observations of their foraging behaviour align with prior reports; other behaviours appear not to have been reported before (at least not within Australia).

Frequently, when I have been lure- or fly-fishing within the territory of an Azure Kingfisher, the bird has come to a perch nearby. When the lure or fly has hit the water, the kingfisher has flown down (plunge-dived) to catch either small fish (Common Jollytail *Galaxias maculatus*, Mountain Galaxias *Galaxias olidus*, Australian Smelt *Retropinna semoni*, Eastern Mosquitofish *Gambusia holbrooki*) or shrimps such as Australian Glass Shrimp *Paratya australiensis* at the surface which had been disturbed by the lure or fly. This behaviour has happened when I have been fishing from a boat and also from a bank.

On one occasion, on the Williams River downstream from Clarence Town, a group of four birds began following me along the shoreline displaying this commensal behaviour and I formed the impression that it was a family group of two adult birds and two young birds, with the young birds being instructed in this technique of gleaning (plunge-diving) and its association with humans on or around their local waters. In this instance, the lure or fly was cast in under the overhanging Weeping Willow *Salix babylonica* tree fronds, disturbing the small baitfish or shrimp taking advantage of the cover.

I also saw the plunge-diving technique when I was fishing from the bank at Lake St Clair (Glennies Creek Dam) at the northern reach of the Carrowbrook arm, where Joshuas Creek flows beneath Carrowbrook Road through a concrete culvert. Adjacent to the culvert is a rock wall for reinforcement of the roadside verge with a moderate tree line providing adequate perches for resting kingfishers. When fishing this type of area, my objective is to cast as close to the shallow edge of the rock wall and work the lure or fly down and out into deeper water. It is usually within the shallow, first 500mm (distance from mean water mark extending out from the bank towards deeper water) that the small baitfish and shrimp make full use of the cover offered by the rocks for protection. However, when the lure or fly hits the water and disturbs them, the kingfisher plunge-dives to take its next meal. Quite often under these circumstances, the kingfisher will stay for as long as the person continues to fish, following the fishing action and only leaving when the fishing action stops. I have

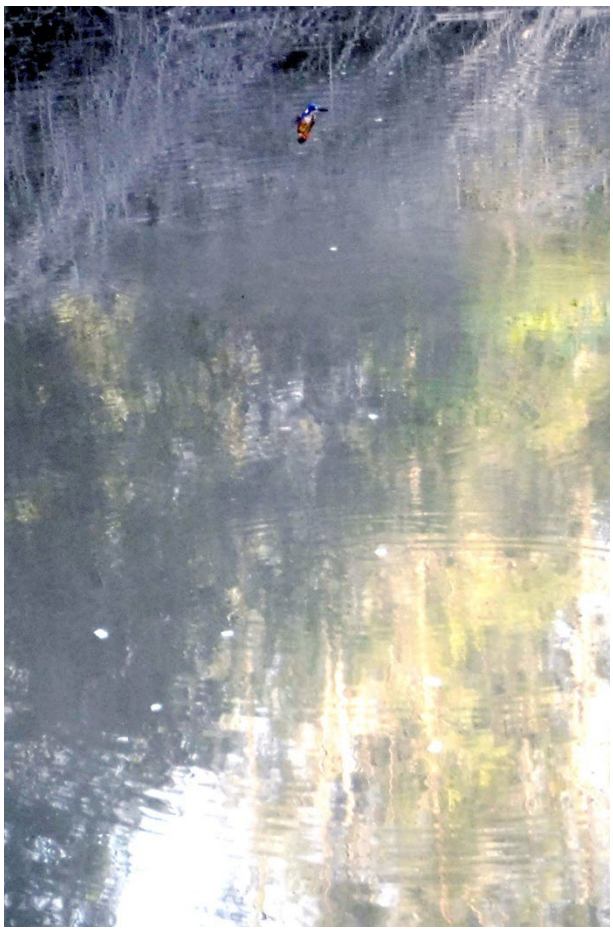
seen this plunge-diving behaviour at various locations around the banks of Lake St Clair and at other locations as well: Williams River, Clarence Town; Wallis Creek, Buchanan; Woodlands Estate Reserve, Thornton; and Bywandah, Ogunbil.

At times when I have been night-fishing an Azure Kingfisher has joined me and exhibited the same behaviour, plunging from a perch to catch small fish or shrimp disturbed by the lure or fly. This behaviour during night-time fishing makes perfect sense as under the cover of darkness, small shrimp, crayfish, small fish and at the right time of the year even mudeyes (dragonfly nymphs), damselfly nymphs and mayfly nymphs can be quite prolific, making themselves targets for easy meals by the kingfishers.

During day-time encounters, the kingfisher would often follow as I moved the boat either upstream or downstream along the same stretch of creek or river, usually parallel to the bank. When the boat was paused at-its new location, the kingfisher once again would take up a perch nearby watching for an opportunity to take the plunge for an assisted feed. Similarly, the kingfisher would follow along the river or creek bank when I was walking the banks. At night-time, the kingfisher would silently glide from branch to branch as I walked the bank. It is worth noting here that when fishing at night, the kingfisher was usually spotted either by ambient sky-light or when a head-lamp was turned on after I had caught a fish or was changing tackle or moving to a new location. Another giveaway was the almost-silent splash from the kingfisher hitting the water when chasing a prey item.

At the Wallis Creek location when fishing for Freshwater Mullet *Myxus petardi* using an artificial bread fly, I have used small pieces of bread for burley to attract the mullet which proceed to feed on the bread. The small Gambusia (Mosquitofish) also feed on the bread, on or very close to the surface. The kingfisher is attracted to the disturbance presumably of the mullet splashing on and around the surface when feeding on the bread.

From its perch beside the river, the kingfisher has been observed to fly out over the water (approximately 10-15 m out from the perch) and sally-hover at a height of 2-3 m above the water, watching for an opportunity to dive and catch a prey item before returning to its perch to consume the food (example shown in **Figure 1**). At other times the kingfisher would plunge-dive directly from its perch into the water to catch its prey.



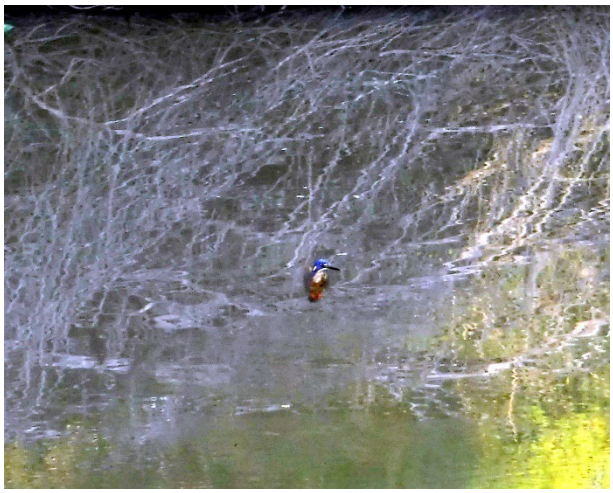


Figure 1. Top image: Azure Kingfisher sally-hovering at 2-3 m above the water surface (at Wallis Creek, Buchanan, 20 January 2018). The white objects on the water are pieces of bread and the ripples are disturbance caused by feeding mullet and Gambusia. Image below: A cropped version of the same photo which indicates the rapidness of the kingfisher's wingbeats.

During the writing of these notes, whilst visiting the inner wetlands area of Four Mile Creek between Metford and Thornton (Woodlands Estate Reserve), I observed an Azure Kingfisher briefly displaying the sally-hover manoeuvre approximately 1–2 metres over shallow water before flying off. I think

I may have inadvertently scared off the kingfisher whilst concentrating on getting a better view of a Black-fronted Dotterel *Elseyornis melanops*.

At no time has a kingfisher been observed to take the lure or fly by mistake or on purpose, they have always been focused on taking prey that has either been disturbed by the lure or fly or attracted by the disturbance.

As also reported in overseas observations (Douthwaite 1976; Tsang & Jianzhong 2006; Ng 2017), these behaviours were always enacted close to shore and never towards the centre of the dam or large expanses of open water which would require excessive flying distances and unnecessary expenditure of energy. The birds I have observed have always been within 5 metres and up to 15 to 20 metres away from my position either on a bank or on a boat.

Other fishermen have reported similar behaviour of the Azure Kingfisher, as per the following quotes:

"*I have watched them dive at my feet to get little fish when standing on the concrete under-road pipes at the northern end of St Clair (Glennies Creek Dam).*" (P. Sewell pers. comm.)

"*I've had them seemingly follow me up a river when wading, but never observed the kind of cooperative hunting you describe.*" (M. Jordan pers. comm.)

"*I have definitely seen this behaviour at Clarence Town.*" "*I have not had the kingfisher follow me along.*" "*Other locations where, after spooking baitfish, the kingfisher gets an easy meal: Darwin Harbour, middle of Cape York, Archer and Jardine Rivers.*" (B. Kershaw pers. comm.)

"*A kingfisher landed on my rod near the first runner. The bird was not disturbed as I slowly drew my rod in 'till we were 10 inches apart and we eyed each other off for a few minutes. I gently moved the rod back to normal hold stance. Under careful watch, I slowly reached down and flicked some mullet into the shallows to draw the attention of the baitfish. In the instant the kingfisher was lining up its prey, the rod doubled over and the kingfisher took for the trees.*" (M. Ewin pers. comm.)

"*I've seen this behaviour before with the kingfishers up the Carrowbrook Arm, St Clair (Glennies Creek Dam).*" (E. Anacki pers. comm.)

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