

## The Chimango Caracara (*Milvago chimango*), an additional fisher among Caracarini falcons

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**Abstract:** The Caracarini falcons are among the most versatile birds of prey, and their variable diet includes fishes, which may be taken as carrion. However, fishing behaviour is described for two species. Here we describe the Chimango Caracara (*Milvago chimango*) fishing at an estuary in Chile, Pacific coast of South America. The caracara flew and glided close to water surface, hovering on occasions. After such a hovering, the bird plunged and attempted to snatch a prey with its talons. If successful, the caracara carried the fish in its talons and landed on an adjacent beach where the prey was torn apart and eaten. The ‘glide-hover’ technique of the Chimango Caracara differs slightly from the fishing recorded for the closely related Yellow-headed Caracara (*Milvago chimachima*), which plunges to the prey from a nearby perch (‘perch to water’). The Black Caracara (*Daptrius ater*) picks up fish individually with its bill or talons while staying on a river bank (‘ground foraging’). Thus, at least three fishing techniques are used by the Caracarini falcons, a group already known for its varied foraging techniques.

**Keywords:** birds of prey, Falconidae, fishing behaviour, foraging tactics, *Milvago chimango*, Chile.

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**Resumo:** Os falcões da tribo Caracarini estão entre as aves de rapina mais versáteis e sua variada dieta inclui peixes, que podem ser apanhados mortos. Todavia, comportamento de pesca está descrito para duas espécies. Descrevemos aqui o chimango (*Milvago chimango*) pescando num estuário no Chile, costa pacífica da América do Sul. A ave voava e planava próximo à superfície da água, pairando de quando em vez. Após este pairar, o chimango baixava rapidamente e tentava apanhar uma presa com suas garras. Se bem sucedido, o chimango carregava o peixe em suas garras e pousava numa praia próxima, onde a presa era dilacerada e consumida. A tática de ‘planar-pairar’ do chimango difere ligeiramente da tática de pesca adotada pelo pinhé (*Milvago chimachima*), espécie relacionada, que se lança sobre a presa a partir de um poleiro. O gavião-de-anta (*Daptrius ater*) apanha peixes individualmente com o bico ou garras, enquanto pousado na margem de um rio. Portanto, pelo menos três táticas de pesca são usadas pelos falcões Caracarini, um grupo conhecido pelas suas variadas táticas de forrageio.

**Palavras-chave:** aves de rapina, Falconidae, comportamento de pesca, táticas de forrageio, *Milvago chimango*, Chile.

## Introduction

Among birds of prey, the Neotropical Caracarini falcons are renowned for their foraging versatility (White et al. 1994), and their variable diet includes fishes, which are taken mostly as carrion (see review in Sazima 2007). However, fishing behaviour is described for two species, the Yellow-headed Caracara *Milvago chimachima* (Vieillot) and the Black Caracara *Daptrius ater* (Vieillot), which use different techniques to secure this prey type (Monteiro-Filho 1995, Olmos & Sazima 2009). Both species take advantage of almost anything edible, from fruits to small animals and carrion (White et al. 1994, Sick 1997).

We report here on the Chimango Caracara *Milvago chimango* (Vieillot) catching small fishes at an estuary in Chile, Pacific coast of South America, a behaviour that seems unreported and perhaps is an uncommon or restricted foraging tactic for this falcon. Additionally, we note that the fishing tactic of this caracara differs slightly from that recorded for the related Yellow-headed Caracara and comment on the three techniques recorded for fishing caracaras.

## Material and Methods

Records of fishing behaviour were made near the mouth of the río Aconcagua (32° 55' 12" S e 71° 30' 28" W, ca. 1-2 m a.s.l.), municipality of Concón near Viña del Mar, Chile. The fishing Chimango Caracara was observed with naked eye, through binoculars, and a 70-300 mm photographic auto-focus camera lens at a distance of about 10-40 m. Observations were carried out on two consecutive afternoons (31 March and 01 April between 05:00 and 06:30 PM local time). "Ad libitum" and "behaviour" sampling rules (Martin & Bateson 1986), both of which are adequate for opportunistic observations and/or rare behaviours, were used throughout. Digital photographs were taken as vouchers, and were used for further analyses, description, and illustration of the foraging behaviour.

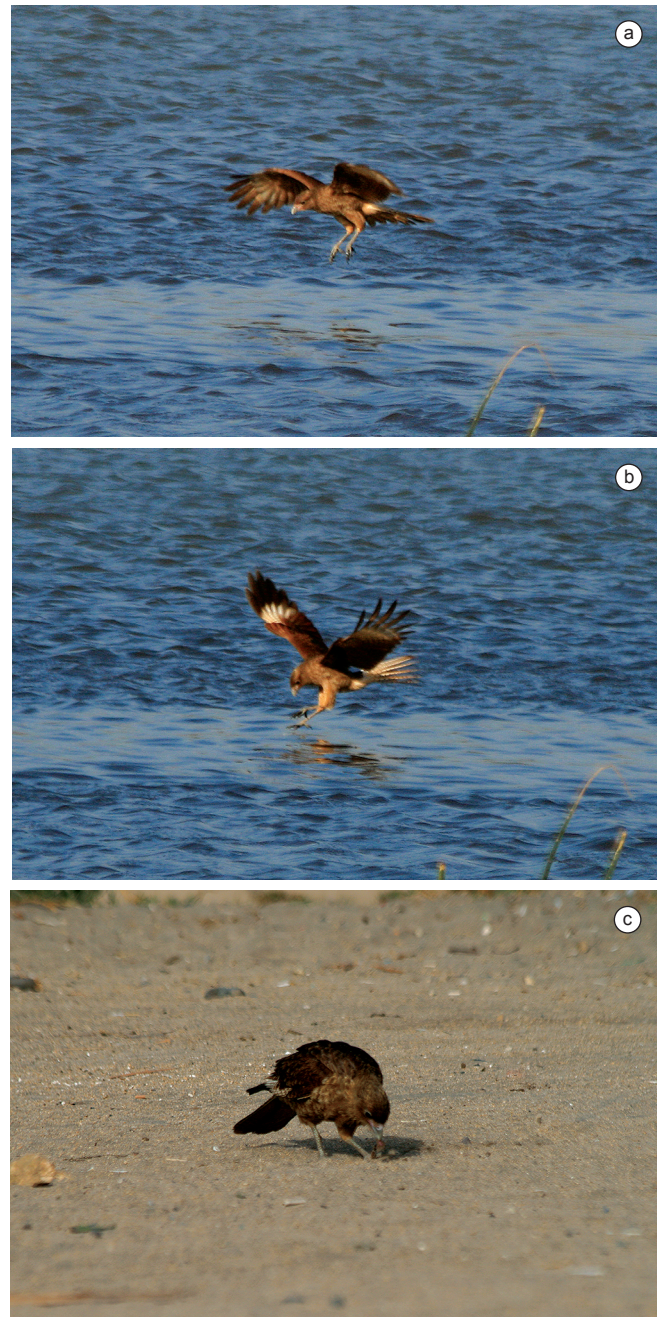
## Results

In the first day, a strong wind blew from the sea, weakening throughout the second day. Each day, only one Chimango Caracara was recorded fishing, presumably the same individual. The caracara initiated its fishing flying downstream facing the wind. It flew and glided about 1-2 m above the water surface, and hovered on occasions while scanning the surface (Figure 1a). After such a hovering, the bird plunged feet first and attempted to snatch a prey with its talons (Figure 1b). If successful, the caracara carried the fish in its talons and landed on an adjacent beach where the prey was held with one foot, torn apart with the bill and eaten (Figure 1c). Fishing success was 28.5% in the first day (2 fishes caught in 7 attempts in 34 minutes), and 16.6% in the second day (1 fish caught in 6 attempts in 29 minutes). The fishing behaviour varied very little if at all, the only difference being more flapping flight the second day, likely due to the wind weakening. The fishes caught were ca. 10 cm long, but we were unable to identify the fish type apart from their appearing whitish to greyish.

Attempted piracy by a Kelp Gull *Larus dominicanus* Lichtenstein and another caracara individual on a successful preying by the fishing caracara was recorded in the first day. The gull attempted to snatch the prey while the successful fisher was still on the wing, whereas the caracara attempted to snatch the prey from the fisher already on the ground. In both attempts, the caracara fisher evaded the piratical birds.

## Discussion

The 'glide-hover' fishing technique of *Milvago chimango* differs slightly from the fishing recorded for its counterpart *M. chimachima*



**Figure 1.** Chimango Caracara (*Milvago chimango*) fishes at the Aconcagua River estuary: a) hovering while approaches the water surface; b) extends one foot shortly before catching a fish; c) tears off a piece of the prey holding it with the foot.

**Figura 1.** Chimango (*Milvago chimango*) pesca no estuário do rio Aconcagua: a) pairando enquanto se aproxima da superfície da água; b) estende um pé imediatamente antes de agarrar um peixe; c) arranca uma porção da presa que segura com o pé.

(Monteiro-Filho 1995), which locates a prey from perches and then hovers and plunges to water surface ('perch to water' cf. Fitzpatrick 1980). One possible explanation may be availability of perches near the fishing site, since at the estuarine habitat studied by Monteiro-Filho (1995) there are extensive areas covered with mangroves, whereas the estuary where we recorded the fishing Chimango Caracara is devoid of suitable perches. Additionally, strong winds, common on the more

exposed coast, would also provide greater lift and make gliding and hovering easier. We have recorded both *M. chimango* (at the Parque Nacional da Lagoa do Peixe and near Rio Grande, Rio Grande do Sul, southern Brazil) and *M. chimachima* (at the Ilha Comprida, São Paulo, south-eastern Brazil) patrolling open beaches for stranded fish and other dead prey while gliding with little effort, a behaviour that likely may be adjusted to fishing near the water surface or in the shallows. Both *Milvago* species have long tails, which enable them to hover fairly well (White et al. 1994) and, thus, visually scan the prospective fishing spot before plunging after the intended prey.

The hunting success of *M. chimango* was low, as compared with that of a highly specialised fishing raptor, the Osprey *Pandion haliaetus* (Linnaeus), whose success averages 50-70% (Poole et al. 2002). Another fishing bird of prey, the neotropical Black-collared Hawk *Busarellus nigricollis* (Latham) had a hunting success of 57% in a short study in south-western Brazil (Magalhães 1990). However, the diet of both these latter two species is based mostly on fishes (Haverschmidt 1962, Sick 1997, Poole et al. 2002), whereas the two *Milvago* species have a very wide diet (White et al. 1994, Sazima 2007). Unfortunately, there are no data on the fishing success of *M. chimachima* (Monteiro-Filho 1995), which precludes a comparison with that of *M. chimango*. Thus, presently there is no a possibility to determine whether a low fishing success is usual for these two generalist foragers.

Contrary to the 'perch to water' and 'glide-hover' techniques of the two preceding caracara species, *Daptrius ater* catches fish individually with its bill or talons while staying on a river bank ('ground foraging') (Olmos & Sazima 2009), in spite of the presumably close phylogenetic affinities between *Milvago* and *Daptrius* (Griffiths 1999, Griffiths et al. 2004). The differences recorded for fishing behaviour between the two *Milvago* species and *D. ater* may perhaps be attributed to ecological features such as vegetation cover and hunting area location, as *M. chimachima* and *M. chimango* dwell mainly in open areas (the latter more so), whereas *D. ater* occurs in forested areas mostly along rivers and lakes (White et al. 1994, Peres 1996, Sick 1997, Sazima 2007).

Thus, at least three fishing techniques are used by the Caracarin falcons, a group already known for its varied foraging techniques (White et al. 1994, Sick 1997, Sazima 2007). Additional field records may eventually indicate that the fishing Caracarin employ more than one technique to catch their prey, as indicated by Black Caracaras catching floating offal while on the wing (Olmos & Sazima 2009). However, we suspect that the fishing behaviour reported for the two *Milvago* species may be restricted to particular ecological conditions, and/or a few individuals or populations or, still, is a phenomenon localised in space and time, as already suggested for some behaviours of birds and other vertebrates (see comments in Sazima 2008).

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