

*This dipper is confined to rivers and streams on the slope of the Andes in southernmost Bolivia and north-west Argentina, where it breeds in the alder zone at elevations ranging from 1,500 to 2,500 m. Its small range and general lack of formal conservation render it potentially vulnerable to modern developmental changes.*

**DISTRIBUTION** The Rufous-throated Dipper (see Remarks) is known from one river in Tarija department, southern Bolivia, but in north-west Argentina it has been recorded from a few rivers in the provinces of Salta and Jujuy, and in Tucumán and neighbouring Catamarca provinces birds have been found in all accessible rivers and streams, and probably occur in most streams without such easy access (M. Nores *in litt.* 1989). Localities (with coordinates, unless otherwise stated, from Paynter *et al.* 1975 and Paynter 1985) are as follows:

**Bolivia** *Tarija* 25 km north-west of Entre Ríos at 21°32'S 64°12'W, 1,650 m (Remsen and Traylor 1983), although the species is apparently genuinely absent further north, where J. Fjeldså (*in litt.* 1991) searched for it in vain during 27 days of fieldwork in September and October 1991 along the río Parapeti, río Pilcomayo and the northern tributaries of río Pilaya in southern Chuquisaca department;

**Argentina** *Jujuy* the eastern range of Sierra de Zenta, at 3,000 m, 23°03'S 65°05'W, near the border with Salta province, June 1924 (Budín 1931: specimen in USNM); and the vicinity of San Salvador de Jujuy, 24°11'S 65°18'W (río Yala; Termas de Reyes; río la Quesera) (Nores and Yzurieta 1981, Castelino 1985, M. Nores and D. Yzurieta *in litt.* 1986, Chebez and Heinonen Fortabat 1987, B. M. Whitney *in litt.* 1991);

*Salta* on the río Lipeo, near Lipeo, Santa Victoria department, 1,500 m, 10 August 1992 (A. di Giacomo, G. Gil and others *per* J. C. Chebez *in litt.* 1992); on the río Baritú inside Baritú National Park, same department, 1,700 m, 11-13 August 1992 (A. di Giacomo, G. Gil and others *per* J. C. Chebez *in litt.* 1992); río Santa María, 43 km west of Orán, 23°17'S 64°14'W, Orán department, July 1947 (specimen in MACN); Lesser, c.24°37'S 65°27'W, where three birds were seen on 1 May 1992 (E. Derlindati *per* S. M. Caziani *in litt.* 1992);

*Tucumán* Trancas department (Cerro Ranchillo; Cerro Negro), Trancas being at 26°13'S 65°17'W (two specimens in AMNH and LSUMZ collected in February 1961 and June 1952 respectively); and the río la Sosa drainage at the following sites (referenced at the end): Aconquija (one specimen in MCZ and five in IML, these latter, collected in August and September, being probably erroneously labelled 3,000 m: M. Nores *in litt.* 1989); Cerro Bayo (possibly Mogote Bayo), the type-locality; Anfama, 1,800 m, at c.26°45'S 65°35'W; La Ciénaga; near Durazno Blanco, Tafí, 1,750 m; near Tafí del Valle; Arroyo La Casita, Quebrada Cañas Horcona, Monteros, 1,800 m; río La Angostura, Monteros, 1,750 m; Punta Carreras, Monteros, 1,700 m; Apeadero General Muñoz, Monteros, 1,600 m (Cabanis 1883, Lillo 1905, Hartert and Venturi 1909, Olrog 1949, Fraga and Narosky 1985, Salvador *et al.* 1986; also M. Nores and D. Yzurieta *in litt.* 1986, R. Vides Almonacid *in litt.* 1986).

*Catamarca* Cuesta del Clavillo, in Nevados del Aconquija, at 27°20'S 65°57'W, and at Esquina Grande, río Chacras, Andalgalá department, at 27°23'S 65°58'W, both near the border of Tucumán (Fraga and Narosky 1985; M. Nores *in litt.* to W. Belton 1982, 1983, M. Nores and D. Yzurieta *in litt.* 1986; coordinates of río Chacras from M. Nores *in litt.* 1989). The southernmost locality holding suitable habitat, Cerro de los Alisos, is only 30 km from río Chacras (M. Nores *in litt.* 1989).

**POPULATION** There is no information from Bolivia (see above). Olrog (1949) stated that "this dipper is not rare in [Nevados del] Aconquija, and is also frequent in río la Sosa, e.g. in the subtropical selva". M. Nores and D. Yzurieta (*in litt.* 1986) stated that the species is "more or less common along all streams in alder woods in north-west Argentina", and gave the following counts: along río Yala 6-8 birds on 5 October 1980, 2-3 on 12 October 1980, 2-3 on 12 November 1981; and at Cuesta del Clavillo five were seen on 31 August 1982, and along río la Sosa six were seen on 22 June 1985; moreover, the bird was common along the Baritú near Angosto in Baritú National Park, mid-August 1992 (A. di Giacomo, G. Gil and others *per* J. C. Chebez *in litt.* 1992). However, M. Nores (*in litt.* 1989), who added a count eight birds and three nests along río Yala on 6 and 7 September 1988, reported the distributional gap in southern Salta and parts of Jujuy as apparently genuine, though inexplicable, and noted that on the rivers where it is found its population is probably limited by the number of available nest sites. R. Vides Almonacid (*in litt.*

1986) counted five along 2 km of río La Angostura, at c.1,750 m in November 1982, but only saw a single bird at La Casita, 1,800 m, during 11 trips (45 days of observation) in 1984 and 1985: from his numerous visits to suitable habitat, he concluded that it was a very local bird with very small populations, and expressed fears that numbers would decrease owing to man's activities. At Termas de Reyes eight dippers were encountered on 29 August 1985 (Chebez and Heinonen Fortabat 1987). G. Hoy, an ornithologist resident in Salta province, had seen the species only a very few times during the 30 years before c.1977 (King 1978-1979).

**ECOLOGY** The Rufous-throated, like other dippers, lives along streams and rivers: it appears to breed only in the alder *Alnus acuminata* zone (Salvador *et al.* 1986, M. Nores and D. Yzurieta *in litt.* 1986), the upper limit of which is given as 2,500 m (Esteban 1969, M. Nores *in litt.* 1989); records of the species from as high as 3,000 m are probably erroneous (M. Nores *in litt.* 1989: see Distribution). The lower limit of the alder zone is given as 1,800 m by Esteban (1969), 1,500 m by M. Nores (W. Belton *in litt.* 1985) and 1,400 m by Salvador *et al.* (1986). Most records where altitude is given, including the three nests described by Salvador *et al.* (1986) and the eight nests found at various localities by C. C. Olrog (Fraga and Narosky 1985), are from between 1,500 and 2,200 m. At the onset of frost birds descend to lower and larger rivers (Dinelli 1918), at least as low as 800 m, although some may remain above 1,500 m (M. Nores *in litt.* 1989).

Like other dippers it perches mostly on boulders and rocky cliffs in or near streams, flies with fast wing-beats and seems to follow the streams as closely as possible (Salvador *et al.* 1986); it has not been reported to perch in trees. The Rufous-throated Dipper usually makes only short flights between foraging sites, frequently calls, and feeds on larvae and insects on the edge of and in the water (Castelino 1985). Reports by Castelino (1985) that it is sometimes completely submerged for short periods are probably erroneous, as other observers, during numerous encounters with the species, have failed to note this behaviour (M. Nores *in litt.* 1989). The dipper has been noted as more active on overcast days or during light rain, when feeding takes place all day: on clear sunny days, birds spend much time standing beneath the shady overhangs of rocks in and along the streams, sometimes not moving for more than one hour (B. M. Whitney *in litt.* 1991). The stomach of one bird contained aquatic insects, mostly beetle imagoes (FMNH label data).

The restricted range of the species is somewhat puzzling, as streams in the distributional "gap" (the recent record from Lesser somewhat confounds this concept) in southern Salta and parts of Jujuy were found to be clean and apparently suitable (M. Nores *in litt.* 1989). Suggestions that competition with aquatic furnariids of the genus *Cinclodes* may play some role (Salvador *et al.* 1986) seem doubtful, as at virtually all sites where the dipper has been found it coexists with a *Cinclodes* sp. (and Torrent Duck *Merganetta armata*), and apparently suitable rivers which lack the dipper also lack the *Cinclodes* and Torrent Duck (M. Nores *in litt.* 1989).

Three nests found in late December were placed in niches in rocky walls 95-125 cm above the water: they were bulky globular structures of green moss (two species), grass stems, a few rootlets and pieces of a filamentous green algae; beneath one nest, the remains of an old nest were found, and whilst one of the nests was abandoned with one egg and another was inactive, the third contained two eggs (Salvador *et al.* 1986); it is not clear, however, whether the two eggs comprised a full clutch. Copulation has been observed (on the río Yala) in early January 1988 (B. M. Whitney *in litt.* 1991), and a half-built nest was found in Catamarca on 2 January 1982 (Fraga and Narosky 1985).

**THREATS** Most if not all of the streams within the Rufous-throated Dipper's range are currently in an acceptable state (M. Nores *in litt.* 1989), but are in serious long-term danger of modification through hydrological control, deforestation, stock-rearing, etc. (R. Vides Almonacid *in litt.* 1986). The fact that only one part of the species's small range enjoys the benefit of protected area status (see below) is of concern if these long-term dangers start to materialize.

**MEASURES TAKEN** None is known, other than that the bird was very recently (August 1992) found in Baritú National Park in northernmost Salta province, Argentina.

**MEASURES PROPOSED** While the present state of the species's habitat is relatively good, the absence of any formal conservation of virtually any part of it represents a significant omission in the management

of the entire region. The establishment of a system of river management so that populations of the Rufous-throated Dipper have access to rivers with high water quality and adjacent areas of alder *Alnus* in which to breed must become a regional conservation priority. Most desirable is the implementation of the planned national park in the Nevados del Aconquija (Beltrán 1987), which would protect populations of this species and also the Tucumán Mountain-finch *Poospiza baeri* and White-tailed Shrike-tyrant *Agriornis andicola* (J. C. Chebez *in litt.* 1992; see relevant accounts). At río la Quesera, this dipper may be sympatric with the mountain-finch (collected there in October 1950), and any initiatives in this area should take into account the requirements of both species. Consideration should also be given to the near-threatened Alder Amazon *Amazona tucumana*, which at least in Jujuy and Tucumán provinces inhabits a number of the same areas (in the same alder habitat and at the same altitudes) as this dipper (Fjeldså and Krabbe 1990).

**REMARKS** The Rufous-throated Dipper was regarded as a subspecies of the White-capped Dipper *Cinclus leucocephalus* by Mayr and Greenway (1960), a treatment not followed by other authors. The wing-flicking behaviour of both *schulzi* and *leucocephalus* (as opposed to the bobbing of Palearctic forms, which lack a white wing-patch) does suggest that they are closely related, (S. J. Tyler verbally 1989, NK), but *schulzi* differs from all three forms of *leucocephalus* in its general coloration (greyish rather than blackish), rufous throat, larger white patch on the underside of the wing, and by the absence of a white cap (Fjeldså and Krabbe 1990), and we here follow the majority of authors in treating it as a distinct species.