

Hand rearing and rehabilitation techniques for Lesser Whistling Teal

The Lesser Whistling Teal *Dendrocygna javanica* is a small, migratory waterfowl found across south Asia, known for their distinctive whistling calls. These birds primarily inhabit wetlands, feeding on aquatic vegetation, insects, and small invertebrates. With increasing threats to their habitat, incidents of ducklings becoming orphaned have risen, necessitating effective rehabilitation strategies for such abandoned chicks (Ali & Ripley 1983). Monitoring the growth in rehabilitated birds is essential for assessing health, nutritional adequacy, and release readiness.

A total of 20 Lesser Whistling Teal ducklings were rescued and brought to the rehabilitation centre of Jivdaya Charitable Trust, Ahmedabad. Of these three weakened ducklings died within the first two weeks of their arrival. The deaths were suspected to be due to hypothermia and were not considered for the growth study. The process implemented to ensure their survival and successful release into the nature are described below.

Upon arrival, the ducklings were weak, and in need of immediate care. They were placed in a controlled environment to mimic maternal warmth. A combination of a 100 W UV bulb and a 55W mercury heat bulb was used to maintain a constant temperature of 35°C over the resting area. In addition to room heater, the bulbs were positioned at a safe distance and operated 24/7 for the first three weeks to ensure consistent warmth. The room temperature and duckling behaviour were

regularly monitored. Towels and dry grass were provided as bedding for comfort and insulation. Initially, the ducklings were housed in two separate cages. Observations revealed that the ducklings appeared more comfortable when housed together in a single medium-sized cage, promoting flocking behaviour and shared warmth. The diet of Lesser Whistling Teal ducklings evolved through three distinct phases, transitioning from hand-fed soft foods to more natural, foraging-based diets (Klasing 1998).

Initial phase (weeks 1–3): Ducklings were fed with a mix of boiled rice, spinach/coriander, beans, and dry insects three times daily. Water plants (gappie grass, hydrilla, duckweed) were introduced to familiarize them with natural food sources.

Transitional phase (weeks 4–6): Protein intake was increased by raising the proportion of dry insects to 30%. Grains like juvar, bajra, and mung were added to the diet. Feeding frequency was reduced to twice daily.

Pre-release phase (weeks 7–13): Water plants constituted 30% of the diet, while rice was reduced to 5% and grains increased to 40%. Ducklings were fed once daily, encouraging foraging behaviour. It was observed that they preferred insects but readily consumed grains as well.

Bathing was an essential component of duckling care, facilitating natural behaviours, feather maintenance, and cleanliness. Shallow plastic



Feeding. © Kirti Jadhav.



Release. © Kirti Jadhav.



Enclosure set up. © Kirti Jadhav.



Bathing. © Kirti Jadhav.

Diet composition (given in two divided fractions)

Food items	Initial phase (weeks 1–3) 700 g	Transitional phase (weeks 4–6) 1,000 g	Pre-release phase (weeks 7–13) 1,500 g
Rice (boiled)	30%	20%	5%
Spinach & Coriander	10%	10%	5%
Other beans (assorted)	10%	5%	—
Dry insects (crushed)	30%	30%	15%
Carnivorous fish food	5%	5%	5%
Water plants	5%	10%	30%
Grains	10%	20%	40%
Multivitamins (Vimeral Containing vitamin A, C, D3, E & B12)	7 ml mixed with food on alternate days	5 ml mixed with food on alternate days	Stopped

Weekly body weight of *Dendrocygna javanica* ducklings (n = 17).

Week	Body weight (g) mean $\pm$ SE
Week 1	36.00 $\pm$ 0.80
Week 2	56.47 $\pm$ 1.68
Week 3	82.47 $\pm$ 2.23
Week 4	111.59 $\pm$ 3.91
Week 5	160.06 $\pm$ 3.48
Week 6	197.06 $\pm$ 4.70
Week 7	247.47 $\pm$ 5.79
Week 8	292.35 $\pm$ 5.48
Week 9	355.35 $\pm$ 7.56
Week 10	393.24 $\pm$ 10.02
Week 11	440.53 $\pm$ 12.64
Week 12	473.53 $\pm$ 17.15
Week 13	555.88 $\pm$ 2.12

tubs were used as bathing pools, with water levels kept low to prevent drowning. Ducklings were allowed to bathe after each meal and were sun-dried to avoid hypothermia.

Enclosures were cleaned daily using diluted bleach or bird-safe disinfectants. Plastic sheets placed under food dishes facilitated easy cleanup of spilled food and droppings.

Gradual exposure to natural environments was implemented to ensure successful adaptation to the wild. During the first two weeks, controlled environment was provided with limited bathing and temperature-controlled enclosure. During weeks 3–5, short sun exposure was provided for promotion of feather development.

Outdoor acclimatization was achieved through introduction to a small release pond and returning to the enclosure at night. During weeks 7–13, aviary housing encouraged their natural behaviours. Finally, during week 13, their successful release was possible into their natural habitat.

Ducklings demonstrated consistent growth during the first four weeks, corresponding with provision of controlled warmth and a protein-rich diet dominated by crushed insects and supplemental fish food. Visual assessment and periodic weighing indicated steady mass gain and improved vigor. Feather development commenced by the fourth week, with near-complete juvenile plumage observed between weeks 6 and 8, suggesting adequate nutrients intake.

The mean body weight of Whistling Teals ducklings increased progressively from 36.00 $\pm$ 0.80 g during the first week to 555.88 $\pm$ 2.12 g in week 13. The growth pattern demonstrated a gradual increase during the initial weeks followed by a rapid growth phase between weeks 4 and 10, and a plateau towards the later weeks. Mukherjee & Mukherjee (2021) worked on Comb Duck which is a larger species with body weight 39–52 g at hatch and 134–168 g by 15 days of age. In contrast, body weight of Whistling Teal with staple diet showed average body weight of 36 g during first week and 556 g at 13th week of age. The Whistling Teal is relatively a smaller species that matures early.

However, the rehabilitation of any bird species is species specific and as such not directly comparable.

Data were analyzed using one-way analysis of variance (ANOVA) to compare weekly body weights. Statistical significance was set at $p < 0.05$.

One-way ANOVA revealed a highly significant difference ($F = 518.28$, $p < 0.001$) in body weight across weeks, indicating that age had a significant effect on growth. The standard error increased in later weeks, suggesting moderate individual variability among birds during advanced growth stages. However, these results were based on small sample size and needs further studies on larger population.

Behavioural development progressed in parallel with dietary transitions. Introduction of aquatic vegetation and grains during the transitional and pre-release phases resulted in increased exploratory feeding, dabbling, and grazing behaviours. While insects were preferentially consumed, ducklings readily adapted to grains and plant matter, reflecting the species' natural omnivorous feeding ecology.

Communal housing enhanced flocking behaviour, reduced stress, and promoted social learning. Bathing opportunities supported feather maintenance and preening, essential for waterproofing. Similar benefits of group housing and phased feeding have been reported in hand-reared Comb Duck chicks, reinforcing the applicability of this approach across waterfowl species (Mukherjee & Mukherjee 2021).

The major challenges encountered during the rearing process included intermittent feed refusal and transient chilling during bathing sessions. These issues were effectively managed through close monitoring, modification of feeding frequency, and immediate post-bath warming. The survival of the majority of the ducklings and their successful release is a coordinated teamwork of Jivdaya Charitable Trust.

Overall, the integration of thermal regulation, nutritionally balanced phased feeding, hygiene management, and gradual outdoor acclimatization resulted in high survival and successful reintegration into the wild.

Acknowledgements

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Pratham Shah & Kirti Jadhav*

Jivdaya Charitable Trust, Panjrapol, Ambawadi, Ahmedabad, Gujarat 380015, India.

*clinicalhead@jivdayatrusted.org (corresponding author)

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