Breeding the Puna Ibis (*Plegadis ridgwayi*) at

Chessington World of Adventures

Ibis are classified in the Order *Ciconiiformes* along with the Herons, Storks and Spoonbills, these major groups are further split into families and subfamilies and it is here that the family *Threskiornithidae* classifies the Ibis and Spoonbills specifically and the Ibis particularly in the subfamily *Threskiornithinae*.

The genus *Plegadis* classifies three species, all quite similar in appearance, the White-faced Ibis (*P. chihi)* of southern United States and central southern South America. The multi continental Glossy Ibis which occurs in only restricted areas of the new world almost alongside the white faced in the US, but also through out the old world and Australia. The Puna Ibis has a much more modest distribution, confined to aquatic or wild grassland habitats in the Andean areas of southern Peru and Bolivia, east to the Peruvian and North Chile coasts.

There is little doubt that the Puna Ibis is a probing feeder, able to search deep into soft mud and crevices while finding food, the natural diet is however equally unknown but probably based on small aquatic and terrestrial vertebrates and invertebrates. Although the beak is long and manipulative the size of prey items must be discriminated by the small size of the birds gape.

At Chessington World of Adventures a flock of sixteen birds mostly adult with a few sub adults has been maintained for many years. Housed in a large aviary the ibis mix contentedly with other species such as Crowned Cranes (*B.pavonina*), Violacious Turaco (*M. violacea*), Lilac Breasted Rollers (*Coracias cordata*) and a selection of Laughing and Whistling Thrush species. The aviary is well-planted affording cover and seclusion for many of the species and a large pond at the front of the flight provides facilities for bathing and drinking and in the case of the ibis, a place for dabbling and food cleaning.

The Ibis move around in small groups of half a dozen birds or as a complete flock probing in the grassy areas or picking amongst the gravel surrounding the pond. They rest either on the ground around the pond or in willow trees in the centre of the flight, they will all roost off the ground usually in the willows and also occasionally on the nesting platforms, though the platforms are not used as readily out of the breeding season.

The diet given is based on soaked Flamingo pellets with the addition of white bait or small sprats and rat pups. The food is usually taken an item at a time to the edge of the pond and dipped in the water before being

consumed. Mealworms, crickets and locust will also be eaten when the opportunity arises, as these livefood items are not fed to the Ibis specifically but are given to other birds in the flight.

Signs of a forthcoming season can be seen initially during March and early April when adult birds start to attain their nuptial plumage in the form of chestnut head and neck feathers, the bare skin at the base of the beak and around the eyes also becomes redder. As a rule the males begin to show these outward signs before the females. Actual nesting normally starts in mid April with one pair at a time choosing one of the eight nesting platforms and lining it with twigs and dry vegetation.

The platforms provided are built as two rows of four nests about two meters high on one side of the flight. Each nest site is about a foot and a half square with wooden dividers between each and a mesh base to allow drainage. A pair will happily nest next to another, but aggression is shown if a bird tries to land on the wrong platform. The ibis have never built nests away from these platforms in trees or on the ground though eggs have very occasionally been laid on the floor with out a nest and are soon abandoned.

Egg production is usually very good with six or seven pairs producing clutches each year. Our main problem seems to be converting these eggs into chicks. The nests in previous years have suffered after days of heavy rain fall and even though the adults prove to be good sitters, after three or four days of bad weather they will desert, leaving eggs that may already have been chilled for some time. To this end the nest platforms were all covered with clear perspex for the 1998 season and to take an extra precaution the first clutch from each pair was pulled for partial artificial incubation and hand rearing. Any remaining clutches were left for parental rearing attempts, with pairs producing second, third and even forth clutches which for various reasons either disappeared or were broken.

The first wave of egg production yielded five eggs from three nests, clutch size has never exceeded two, uniformly pale blue eggs, often only one is laid. All were fertile and successfully incubated hatching within 7 days of each other after 24 days of incubation. There was a gap of about a week before any more nests were built and eggs laid. Through out the time the first nests were being built extra nesting materials were scattered daily in the flight and were soon exhausted. It appeared that sitting hens would continually accept and use nesting brought to them by their partners producing nests up to four inches deep on occasions.

The second wave of eggs produced three eggs from three nests, only one of these was finally hatched as one egg was cracked and the other eventually hatched under its parents and was left for them to rear, unfortunately the chick only lasted three days before it disappeared.

The successfully hatched chick (number six), was always going to be hand reared singularly and because of fears that this bird would become imprinted, two more eggs were taken from two double egg second clutched nests thought to be of a similar age. These extra eggs hatched too late to be of any instant value to the number six chick and it became obvious that we would have to wait until weaning before this chick could try to be mixed with other Ibis.

Hand rearing often carries the price of some kind of taming. However Ibis species which I have been involved with in the past, if reared as a group and left to feed themselves as soon as they are able in an established group have all reverted to natural behaviours and will soon take no notice of their keepers.

Initially the hand rearing diet was a blended formula of sprats, rat pups and soaked flamingo pellet. Large quantities were mixed and split into smaller amounts for freezing. Feeds were given five times a day at three-hour intervals via a one-millilitre syringe with the end removed. Placing a finger on each side of the infants' beak mimicking an adult bird's beak stimulated a begging response.

Food was warmed and slowly administered to the begging chick allowing it to swallow at its own pace. Quantities of food increased from one millilitre per feed on the first day to two on the second and three on the third and so on until each chick reached five or six days old. At this time the blended part of each feed was held at five millilitres per feed and the growing appetite satisfied with white bait, small pieces of sprat and pinkie mice. Soaked flamingo pellets or trout pellets were given as part of the diet at about ten days by which time all blended feeds were ceased.

Chicks would begin to confidently stand for short periods at fifteen days or so and by twenty days were able to walk strongly and would also begin to pick up food for themselves.

It was noticeable from hatching that individuals had differences in the colouration of the beak. Some chicks would have straightforward dark beaks whereas other had a thin flesh coloured band about mid way along the beak. This variation occurred at random so was assumed possibly to be an indicator of sexual dimorphism as opposed to inherited traits from parents. It might also be note worthy that chicks exhibiting no band on the

beak grew to a weight of between 700 and 750 grams at 35-40 days where at the same time the birds with bands were only achieving 600-650 grams. Perhaps this weight variation (if not coincidence) is the difference between males and females as infants though a sexing procedure will be needed to verify.

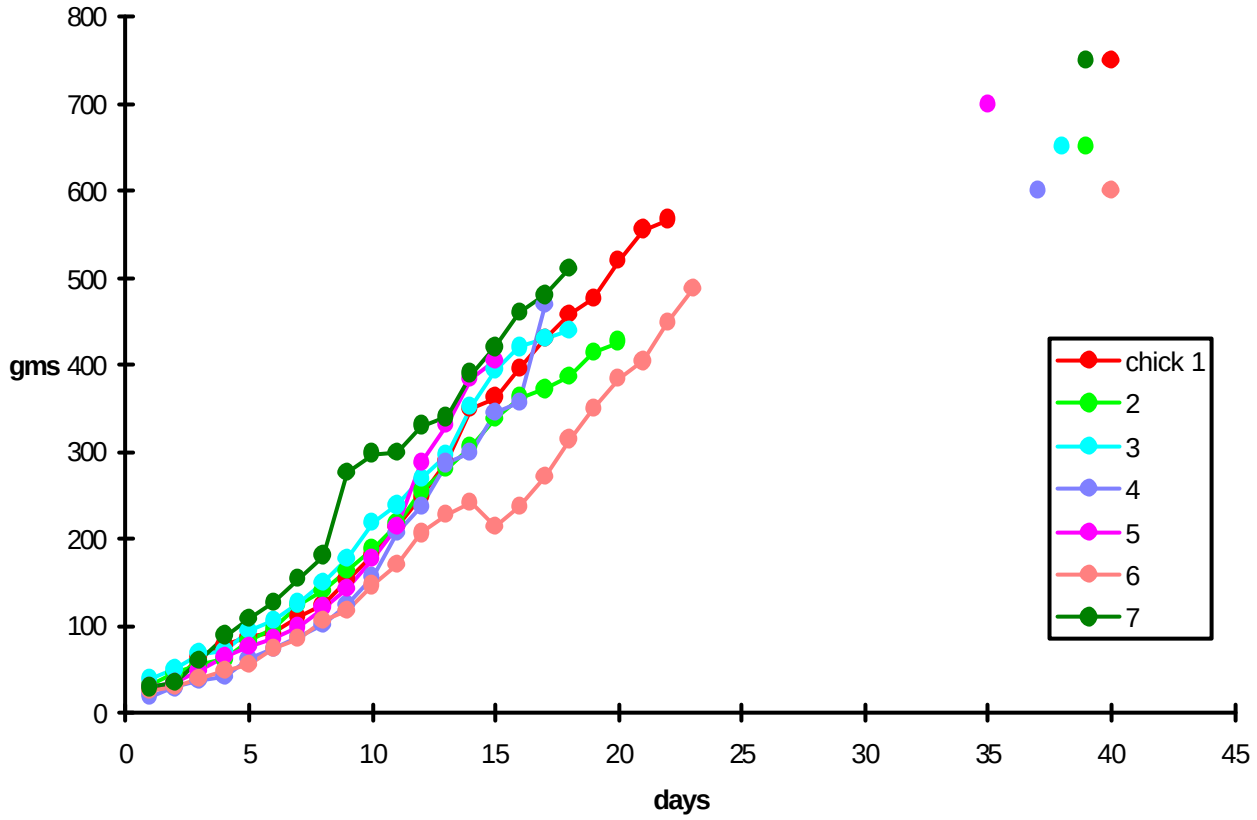
Our first group of five youngsters were walking and feeding well by the time the youngest chick was twenty five days old and at this stage the group was moved to the heated night shelter of the Puna Ibis flight. They were allowed access to an exposed safety porch to allow they time to get used to their surroundings feed independently and continue growing. By the 20th of June these chicks were well feathered and nearly fully feathered and had begun to meet adult birds that would sneak a quick feed from the food left out for the chicks by entering the night shelter. It is normally unusual for the adults to go under cover even in the winter, but it is hoped that this contact would prepare the juveniles for when they are allowed access to the main flight.

At a similar time one or two chicks had hatched on nest attended by their parents. Although two eggs can be laid in the same nest, it is unusual for two chicks to hatch. One of the parents hatched chicks abnormally piped from the wrong end of its egg and although it did hatch safely, it did not survive more than three days. A second parent hatched chick was reared, this chick fledged (or fell safely) from the nest at about three weeks, long before it was able to fly. Additional feeds are fed each day in the afternoon to prevent any potential chick losses through insufficient food or competition.

At the time of writing all hand-reared chicks have been reared successfully, one or two remain tame in the presence of people, but if observed from outside the flight they will interact and behave apparently naturally. Increased interactions with the adult group can only make their natural behaviours stronger.

Although a beautiful bird close up the Puna Ibis is not particularly eye catching from a distance which might explain why they are not commonly kept, their seemingly poor ability to parent rear in captivity must also affects their availability. However, even though not rated as threatened globally, their distribution is small and their habitat is lessening which indicates they deserve some attention in captivity.

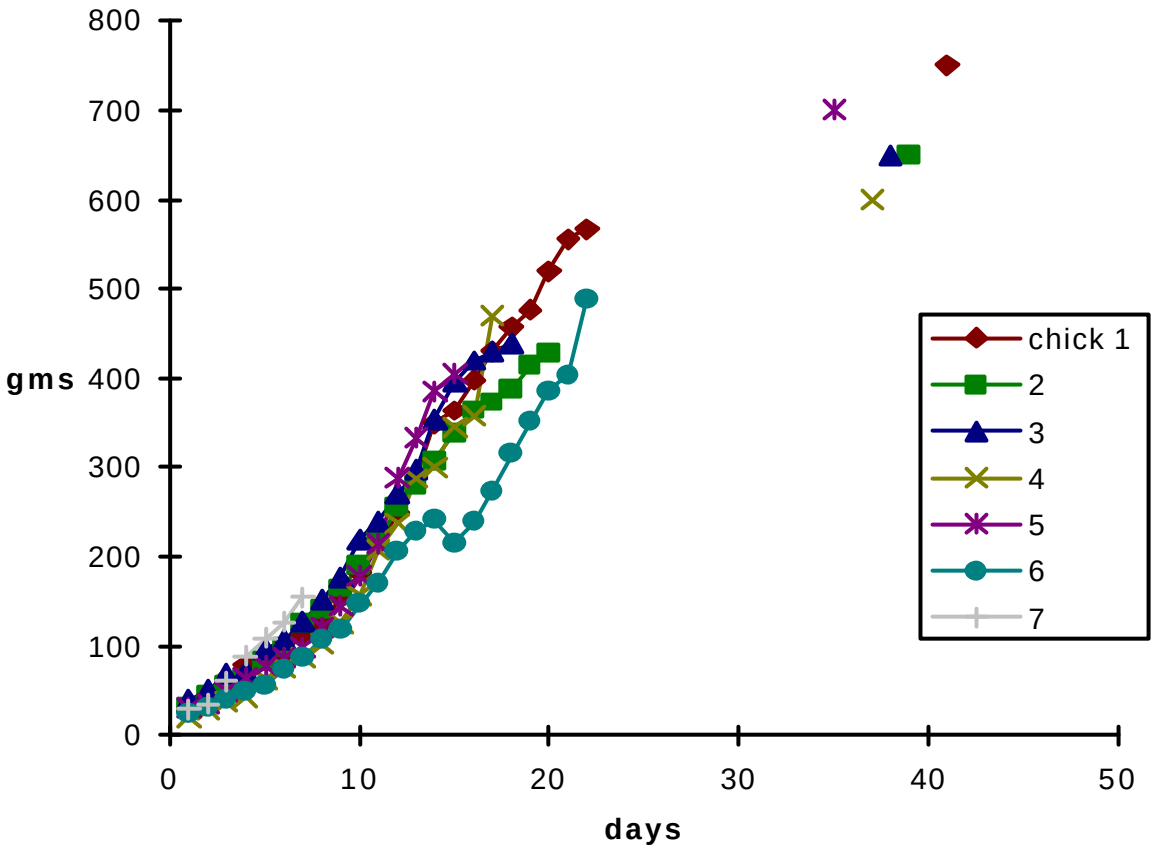
Weight gains for 7 hand reared Puna Ibis chicks in 1998



Nest and egg data for Puna Ibis 1998

Nest	Egg/s Laid	Egg/s Pulled	Hatch Date	2nd clutch	2nd result	3rd clutch	3rd result	4th clutch	4th result
1	19/4	4/5 2 eggs	13/5 15/5	10/5 1 egg	3/6 DIS	8/6 1 egg	DIS	9/7 1 egg	
2	22/4	5/5 1egg	16/5	15/5 1 egg	disappeared	26/5	19/6 chick up side down	9/7 2 eggs	
3	3/4 2 eggs	17/5 19/5	17/5	27/5 2 eggs	disappeared	8/6 1 egg	15/6 disappeared	21/6 1 egg	19/6 DIS
4	?	8/6 DIS		22/5 1 egg	15/6 parent hatch				
5	6/5	27/5 1 egg	30/5	6/6 1 egg	6/6 cracked	30/6 2 eggs			
6	10/5	17/5 1 egg cracked		5/6 1 egg	6/6 cracked	2/7 2 eggs			
7	12/5		5/6 parent hatch (DNS 3 days)						
8	No nesting attempts								
Floor	11/6 1 egg	11/6	1/7 DIS						

Weight gains for 7 hand reared Puna Ibis chicks in 1998



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