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"THE WHITE-WINGED GUAN, Penelope albipennis, ITS REDISCOVERY, STATUS, NESTING, SYSTEMATICS, AND RECOMMENDATIONS FOR ITS CONTINUED SURVIVAL"

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The White-winged Guan, Penelope albipennis, was described in 1877 by Ladislao Taczanowski from a male collected in 1876 by J. Stolzmann in the Department of Tumbes, NW Peru. Although Stolzmann reported the bird to have been common some 30 years before he collected the type specimen, only three specimens were placed in museum collections, the last of which was taken in 1877. In their outstanding treatise on the family Cracidae, published in 1973, Delacour and Amadon reported the species as "now believed extinct".

In September, 1977, upon returning to the coast from an expedition to NE Peru, O'Neill met with del Solar to learn that del Solar had firm evidence from a local farmer that guans with white wings did indeed live in the area of the farmer's small agricultural plot in the Andean foothills. On 13 September 1977, O'Neill and del Solar met with the farmer and proceeded to drive some 12 kilometers east of the Pan American highway, just south of the village of Naupe, Department of Lambayeque. At the end of the driveable part of the trail, they walked another five kilometers into the first foothills of the western Andes. Upon reaching some 600 meters in elevation, the first guan seen by a biologist in one hundred years, flew from a hillside down to the tops of tall trees in the canyon below. The immediate impression by O'Neill was that of a long-tailed Black Vulture (Zopilote ó gallinazo), Coragyps atratus, as the white primaries were plainly evident. By the end of that day, 6 - 8 birds were recorded.

Although the first specimens were collected in or near mangroves close to the coast of Peru, the species was rediscovered in the dry-forest-covered

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foothills of the Andes, some distance from the sea. The literature on the White-winged Guan repeatedly stressed that the species was an inhabitant of mangroves and all searches for the species centered on that assumption. Even the late Maria Kopecke, who repeatedly urged del Solar to look for the species, thought it would be found in mangroves. Del Solar regularly hunts White-tailed Deer in NW Peru and repeatedly asked people in the region if they knew of a pava with white in the wings. Various people said "yes," they knew of such a bird, but not until September 1977 did anyone agree to take him to a place where the birds existed.

After rediscovering the bird, del Solar and O'Neill began to put many facts together to form a picture of how the species had escaped detection for such a long period. First of all, it was not, at least now, an inhabitant of mangroves, but resided in extremely specialized canyons in the dry-forested hills. These canyons, where springs exist so that precious fresh water is available all year, support a dense forest of large, evergreen trees that provides food for the guans. The slopes above the canyons support a dry forest of mostly Bombax that is leafless during much of the year and unlikely to be of much use to the guans during this leafless stage. These humid canyons, locally called jaguayes, also support a wide variety of plants and birds that are not to be found on the dry slopes directly above them.

In 1978, Ortiz began a systematic study of the White-winged Guan (Ortiz, 1980) to determine its dietary and habitat requirements, its population, and its chances for continued survival. The first portion of his project was to visit every jaguay where he could determine that guans were or had been. He and del Solar interviewed as many people as possible and he then proceeded, often with considerable physical effort, to visit each of these places. The

results were that approximately 49 to 62 birds presently inhabit only about 15 of the dozens of canyons that could potentially support them. Even allowing for missed birds and canyons not visited, it is unlikely that more than 100 White-winged Guans exist today, with a maximum of approximately 8 birds in any one canyon. The present range of the species is shown in Figure 1.

The guans eat a variety of fruits, flowers, leaves, buds, and seeds. Ortiz found the birds to eat from at least 43 plants, but the principal ones are as follows (in addition, he noted coffee, sweet potatoes, corn, and beans to have been eaten from gardens on one or more occasions):

Local name	Family	Scientific name	Part eaten
Almendro	Leguminosae	Geoffroya striata	fruits, flowers
Angolo	Leguminosae	Pithecellobium multiflorum	pods, leaves
Higuerón	Moraceae	Ficus sp.	fruits
Faique	Leguminosae	Acacia macraçantha	pods
Obero	Borraginaceae	Cordia rotundifolia	fruits
Frejolillo	Leguminosae	Erythrina sp.	flowers
Lipe	Ramnaceae	Scutia spicata	fruits
Palo blanco	Ulmaceae	Celtis iguanea	fruits, leaves
Sheguicho	Compositae	Encelia sp.	flowers, leaves, buds
Cerezo	?	?	flowers, leaves, fruits
Palo negro	Solanaceae	Grabowskia boerhaaviaefolia	fruits
Chamelico	?	?	fruits, leaves
Palo Santo	Burseraceae	Bursera graveolans	fruits, leaves
Pucho	Rubiaceae	?	fruits
Pasayo	Bombacaceae	Bombax discolor	seeds
Naranjillo	?	?	fruits

The first taxonomic treatments of Penelope albipennis (Ogilvie-Grant 1896, Peters 1934) considered the species allied to P. ortoni, of the west slope of the Andes of Colombia and Ecuador. Peters (1934) and Vuilleumier (1965) speculated that P. albipennis represented a partial albino of P. ortoni, despite the fact that Stolzmann (in Ogilvie-Grant 1896) reported seeing other birds with white wings. Hellmayr and Conover (1942) pointed out that P. albipennis is much larger than P. ortoni and questioned their

relationship. Vaurie (1966a, 1968), who reviewed the taxonomic history in detail, pointed out that Stolzmann was a "reliable and painstaking observer" and stated that his accounts of seeing other white-winged birds were probably accurate. This evidence combined with size and plumage differences between P. albipennis and P. ortoni led Vaurie to conclude that P. albipennis was a distinct species, but he was reluctant to speculate on its taxonomic affinities. Delacour and Amadon (1973) also discounted the hypothesis of Peters and Vuilleumier and stated that although the affinities of the White-winged Guan were unknown, it was probably related to P. purpurascens or P. jacquacu.

At the time of the rediscovery of P. albipennis, Eley was in Peru studying birds with a group of graduate students from Louisiana State University and decided to look further into the relationships of the White-winged Guan. He was able to observe the guans for behavioral information and to make use of tape recordings of its vocalizations made by our colleague, Theodore A. Parker III. Additionally, he measured specimens of Penelope from several major U.S. museum collections and performed a variety of statistical tests using the data he collected (Eley,1979).

On the basis of size P. albipennis fits into a group of large, allopatric lowland-inhabiting species that also includes P. jacquacu, P. obscura, P. perspicax, and P. purpurascens.* This group is also further united on the basis of a "yelping" type call. The presence or absence of a tracheal loop in the genus Penelope is confusing; it is present in P. jacquacu and P. obscura, which are morphometrically and vocally quite similar, but apparently absent in P. perspicax, which is close to P. jacquacu in overall plumage coloration and in morphometrics. P. purpurascens and P. albipennis do not have a tracheal loop and seem to be the most derived members of the species group. P. albipennis has four uniquely derived characters -- white

* see Figure 2

primaries,a bi-colored bill (blue-gray with a black tip), dark greenish slate plumage, and rosy-slate, instead of bluish-slate, facial skin.

Using a variety of morphometric, behavioral, and vocal characters, Eley concluded that P. albipennis is most closely related to P. purpurascens and thus it is likely that a portion of the proto-purpurascens stock was isolated in the dry forests west of the Andes during the Pleistocene and gave rise to P. albipennis.

Wild guans are most active in the early morning and in the evening. They are usually in pairs and remain in a territory that is most heavily defended during the breeding season (February to August). Daily activity begins at about 5:45 AM with wing-whirring displays, which are followed by a series of loud "barking" calls that can be written as "jar - jar". About 6:15 AM the wing-whirring displays cease and the birds move away from the roosting area to feed and get water. At about 7:30 or 8:00, when the temperature begins to get rather warm, the birds move into the shady parts of the canyon to feed and rest. At about 16:30 or 17:00 the birds again feed in more open situations. Wing-whirring occasionally takes place in the evenings as roosting begins. Roosting does not always take place in the same tree each night.

Stolzmann (in Taczanowski 1886) commented on a nest that was found in the same bush where his companion Jelski shot a female guan that was with two chicks. As Williams (1980) points out, however, there is no proof that the nest Jelski found belonged to Penelope albipennis, and the fact that no mention of green vegetation, a common feature of cracid nests, was made could indicate that the nest was not of the guan. On 27 May 1978, Bernard Peyton and two Peruvian assistants located a guan nest containing three eggs

in northern Lambayeque about 36 km north of Olmos near the Piura border. The nest was near the head of a small stream called, appropriately, the Quebrada de Pavas. The nest was located about 2.5 meters above the ground in a small vine-covered tree that leaned down the slope so sharply that the nest was only slightly higher than the base of the tree. The nest was about 30 centimeters across and about 20-25 centimeters deep. It was composed of twigs and leaves and some of this material was still green. The three eggs rested in a slight depression, but there was no appreciable nest cup. According to Delacour and Amadon (1973) the nest, eggs, and nest site appear to be quite typical of cracids in general, and of guans in particular. The nest was abandoned on 29 June, after an incubation of at least 33 days. Heinz Plenge, a naturalist-photographer from Chiclayo, was observing the nest when it was abandoned. He waited two days, and after the parents did not return, collected the eggs and took them to del Solar in Chiclayo. The eggs, which were almost white when discovered, were a dark cream, almost tan color when collected and had a rough surface typical of those of large cracids. They measured as follows: (1) 76.4 x 52.8 mm, 84 g, 107 ml (volume determined by water displacement); (2) 74.9 x 51.9 mm, 83 g, 100 ml; (3) 72.6 x 51.4 mm, 69 g, 93 ml. On 5 July, Williams drilled and cleaned the eggs which are now in the Museo de Historia Natural "Javier Prado" in Lima.

In May, 1978, a baby White-winged Guan was brought to del Solar. The bird was downy except for its well-developed wings and was assumed to be less than a week old. Del Solar made arrangements with a veterinarian in Chiclayo to check the bird frequently for parasites and any possible health problem. On a diet of prepared poultry food, assorted grains, chopped fruits and

vegetables, water, and a vitamin-mineral supplement, the bird prospered and grew steadily. Even in its first plumage the bird showed the white primaries, but these juvenile feathers were quite dusky at their tips. The bird remained in good health and by the end of the first year was in fully adult plumage. Del Solar constructed a cage on his interior patio at his home in Chiclayo that measured approximately 5 x 1.5 meters, and placed perches at opposite ends of the enclosure to encourage the bird to fly. He later acquired an individual Penelope barbata and a P. jacquacu, but allowed Jesus Estudillo to take the P. barbata. The other two birds were compatible and remained healthy.

In December, 1980, the now adult P. albipennis produced a single egg, proving it to be female. The following morning, del Solar found the bird sitting with its feathers puffed and obviously not in good condition. He caught it for inspection only to find that it had an everted cloaca that was infected. Although the bird was immediately given all possible care, it died shortly thereafter. Ironically, its cagemate, the P. jacquacu has produced two consecutive clutches of eggs with no ill effects.

The outlook for the White-winged Guan is questionable. The species now has full protection under Peruvian law and is officially listed as an Endangered Species, but these actions are only written ones and, in reality, have had little effect on the bird. Del Solar has received a modest grant from the World Wildlife Fund for conservation efforts in behalf of the White-winged Guan, but local political problems have hampered initiation of these actions. Part of this grant will go toward a major educational effort for that is desperately needed. Local people must develop an interest in the species as a bird found nowhere in the world but northwestern Peru,

and peer pressure must be encouraged for its protection. Habitat destruction and shooting of birds for meat must be stopped, but the inducement for these actions must be on a local scale if they are to succeed. At this time there are probably enough individuals to have a viable genetic pool, but the fact that most groups of eight birds or less are separated from each other by expanses of dry forest is a problem. The humid canyons that are necessary for the birds' survival are highly sought by local farmers because they offer water on a year-long basis. The small areas of soil in the lower slopes of the canyons, especially with their proximity to water, are being cleared of trees for planting of subsistence crops such as beans, manioc (yuca), or corn. The trees that are being removed by the clearing are often those most needed by the guans for food. Additionally, guans are being shot for meat by the farmers moving into these areas.

The White-winged Guan is a prime candidate for a captive-breeding program, but such a program must be started soon. Our suggestion is that Dr. Jesus Estudillo, in consultation with other members of the World Pheasant Association, formulate an official plan for the establishment of an initial program. The establishment of the initial program in Peru would be more likely to be acceptable to the Peruvian government and it also seems desirable to begin in an environment similar to that inhabited by the species. Under no circumstances should the program be allowed to take place in the cold and polluted atmosphere of the Lima region. Since only a single chick has been found in a four-year period, it seems advisable to trap adult birds for a breeding program if such action is likely to succeed. At least three, and preferably four, pairs of birds should be captured in order to assure that the captive population will have the genetic variability

that will make it strong and viable. Initial efforts must include funding not only for spacious housing for the birds, but for a knowledgeable person to oversee every aspect of their care and well-being. As young are produced, they should be transferred to facilities outside of Peru so that the entire captive-population is not held in a single facility. Surveys should be made to determine where guans can be reintroduced, but this can come only in conjunction with a major education program. At this time, with such a small guan population, the shooting of birds for meat is having a decided negative affect on the population and the species could be easily exterminated from an area that may still be ecologically suitable. The White-winged Guan is a beautiful and spectacular bird and we must do everything possible to see that it does not become extinct in the near future.

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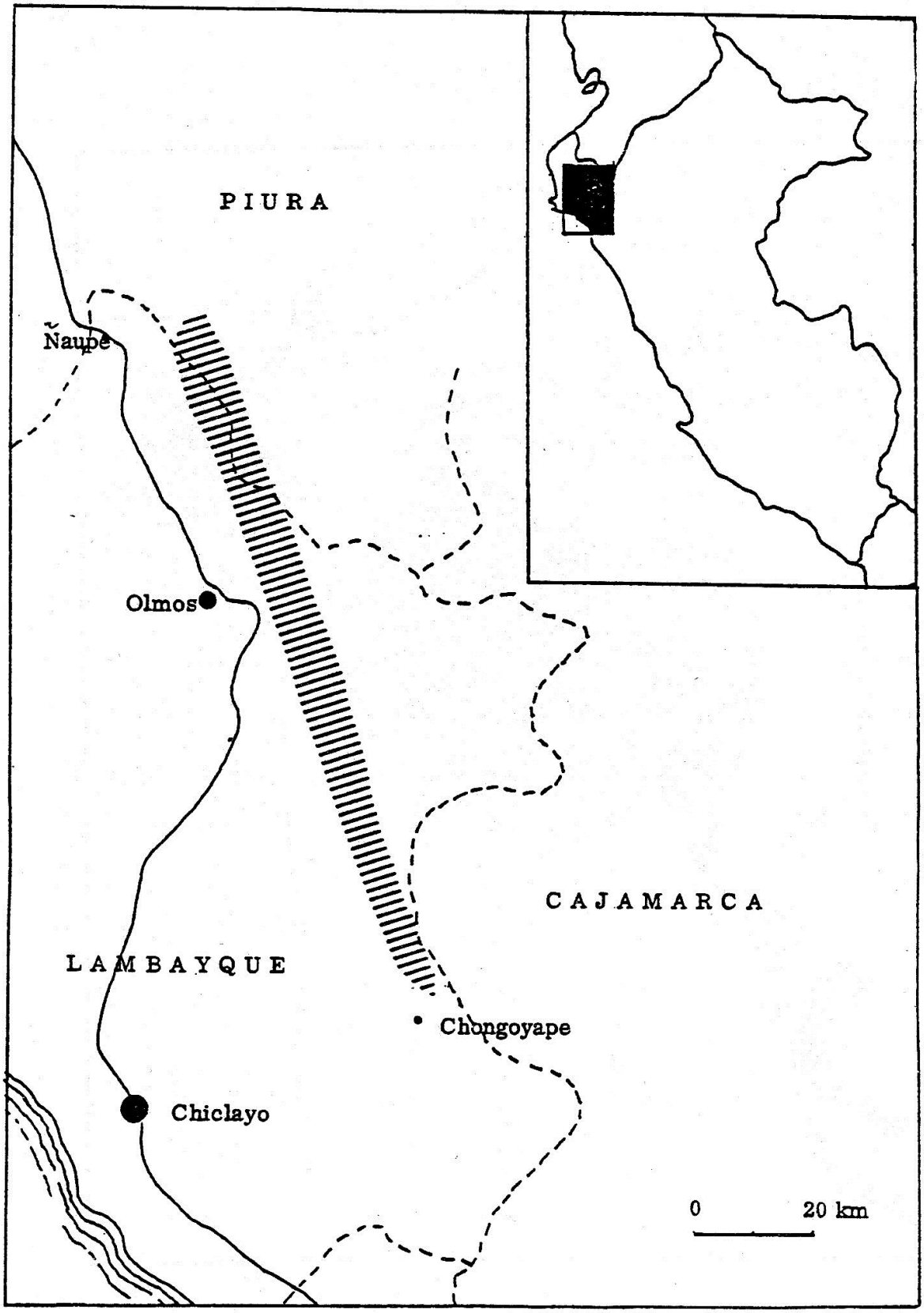

Figure 1. Known Range of Penelope albipennis.

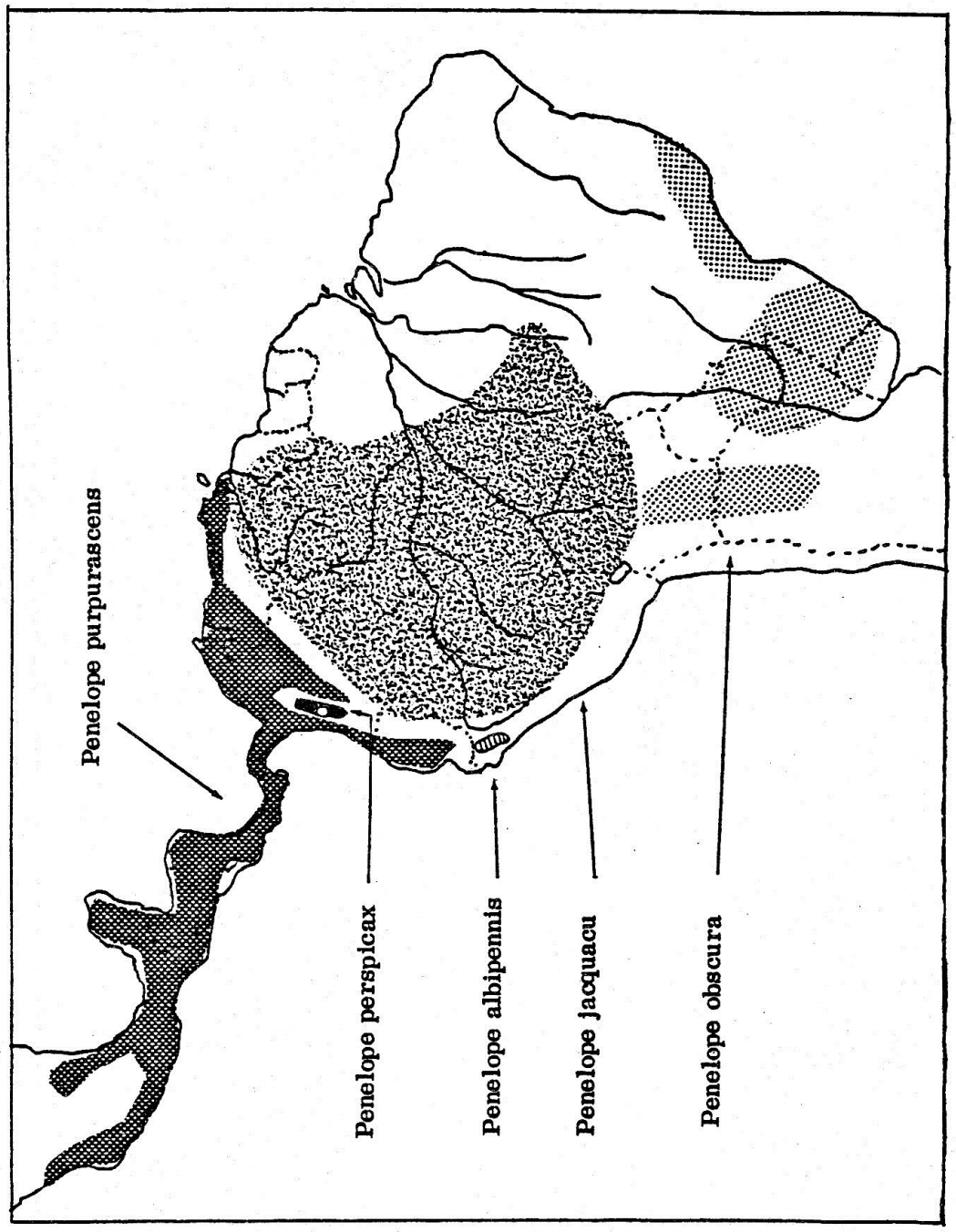

Figure 2. Ranges of Five Species of Penelope (from Vaurie 1968).

"LA PAVA DE ALA BLANCA, Penelope albipennis, SU REDESCUBRIMIENTO, SITUACION ACTUAL, ANIDACION, TAXONOMIA Y RECOMENDACIONES PARA SU CONSERVACION"

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La Pava de Ala Blanca era descrita en 1877 por Ladislao Taczanowski de un macho colectado en 1876 por J. Stolzman en el Departamento de Tumbes en el noroeste del Perú. La especie era considerada extinguida, pero en 1977 fué redescubierta por John P. O'Neill y Gustavo del Solar.

Esta ave habita cañones humedos, localmente llamados "jagueyes", -- dentro del bosque seco en la base de los Andes occidentales en el noroeste del Perú.

La población no parece ser más que de 100 individuos.

Hay mucha presión para el uso humano de los "jagueyes" por la presencia de agua, que es normalmente muy escasa en esa zona seca.

La Pava de Ala Blanca está protegida por la ley Peruana, pero un- programa para propagarla en cautiverio parece muy recomendable.

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