

BIRDING THE MANU BIOSPHERE RESERVE, PERU

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Peru stands at the top of the international birder's agenda. Complex patterns of biogeography and topography across many different ecotones have blessed the country with some of the greatest diversity and density of birds on earth. This coupled with its rich history and culture makes Peru a must see destination for the intrepid birder. Approximately 1,792 bird species are known to occur in Peru, which corresponds to 18.5% of all known bird species on earth, and 45% of all neo-tropical birds. In fact, only Columbia has a higher diversity of bird species. Many species new to science have recently been discovered in Peru (including from the Manu region), and the majority of these still await formal description. Unlike other top-ranking neo-tropical birding destinations, such as Ecuador or Costa Rica, Peru still has extensive tracts of undisturbed habitats. Consequently, most reputable bird tour companies have Peru on their menu of birding holidays.

Nowhere is this wealth of diversity more evident than in the tropical forests and associated habitats of Manu, in south-eastern Peru. To date up to ten different types of lowland forest habitat have been identified in this part of the south-western Amazon basin, and these themselves contain many other distinctive microhabitats. The extraordinary levels of diversity are also evident in other taxa: in just one hectare of lowland forest, there are often up to 300 species of trees and more than 1300 plus species of butterfly have been recorded at Pakitza in Manu. During a typical tour, birders also often encounter eight or more species of primates; experience the nocturnal habits of Brazilian Tapirs (and other mammals) at clay-licks; bump into a family group of Giant Otters on one of the many oxbow lakes; and frequently see Jaguar along the rivers. It is in the richness of birds however, that visitors to Manu experience the full wealth that the process of evolution has to offer. To understand just how South America 'became' the 'birding continent', one has to briefly recap on geological history. During the Cretaceous period (± 4 to ± 0.3 million years ago), the great southern continent Gondwanaland broke up and the land mass that is now South America broke off from present-day Africa. This land mass continued to drift north-west until it came to rest against modern Panama and Costa Rica, forming a permanent land bridge. Prior to this event, South America was an island continent of low relief for about 100 million years. As South America separated from Africa, it carried with it the early ancestors of the passerines (perching birds). Modern descendants of these species include: the manakins (*pipridae*); tyrant-flycatchers (*tyrranidae*); cotingas (*cotingidae*); ovenbirds and woodcreepers (*furnariidae*); tapaculos (*rhinocryptidae*); and typical antbirds (*thamophilidae*). The other passerine families that exist today in South America, such as tanagers (*thraupidae*) and warblers (*parulidae*), are almost certainly of northern origin whom spread south when the Central American land bridge was formed. Their evolution was no doubt influenced greatly by further changes in migratory behaviour related to further geological events and elements of climate change. These northern colonists belong to the oscines or 'true songbirds'. The southern group of Gondwanaland origin, the suboscines, are often termed the more 'primitive'.

Two further process account for the extraordinary levels of biodiversity in the Manu region. First, during the last Ice Age, water became locked up in extensive ice

sheets. Consequently, there was less moisture in the atmosphere available to produce rain, dramatically reducing the rainfall. Continuous rainforests became naturally fragmented into separated patches, or refuges, isolated from each other by large stretches of grasslands or savannah. As a consequence, populations of forest birds remained reproductively separated over extensive periods of geological time, each evolving distinctive ecological traits. When the ice sheets retreated and global rainfall increased, these forests once again flourished and advanced. The linkage of the formerly separated refugia resulted in the 'coming together' of the now, many new distinct species, all of whom shared common ancestors.

This high diversity of bird species can only be supported however, by a similar high diversity of ecosystems, microhabitats and resources. At first glance the Amazonian region looks pretty much the same, but even the most casual of visiting birdwatchers to the Amazon region can, with some care, differentiate between the variety of habitats and micro-habitats that make up a vast, complex mosaic. The careful birdwatcher will note that many of the bird species seen have some very specific habitat preferences. These include the river islands in large Amazonian rivers; bamboo patches; ox-bow lakes; flooded varzea forest; transitional floodplain forests; terra-firme forests; stands of riverside cane; areas of willows along the rivers; tree-fall gaps; small streams; and palm swamps.

The Manu Biosphere Reserve is a Natural World Heritage Site and is located on the eastern slopes of the Andes and protects almost the entire watershed of the River Manu and most of the tributaries of the River Alto Madre de Dios. The Reserve encompasses a variety of altitudinal zones and habitat types, from over 4000 meters above sea level in the chilly high Andes, down to 350 meters in the hot and humid lowland Amazonian forests. There are distinctive and very noticeable 'shifts' in the structure of the bird communities for every 500 meters gained or lost in elevation. More importantly, two-thirds of the Manu Biosphere Reserve is undisturbed habitats that remain unexplored, and contain some of the last un-contacted indigenous tribes on earth. At the time of writing approximately 1020 bird species have been recorded within the boundaries of the Biosphere Reserve (one ninth of all species found on the planet), which is significantly more than the total species known to occur in Costa Rica. No other protected area on Earth contains so many bird species, and ornithologists expect this figure to increase in the near future as remoter areas of the reserve are explored.

If you are new to Neotropical birding, Manu's potential can be daunting and some of the identifications can be tricky! Currently, some 3000 visitors make the trip to Manu each year, and on a typical two to three week birding trip from the Manu highlands to the lowlands, birders regularly record 450- 550 species. However, the publication late last year of the long-awaited *Birds of Peru* could not have occurred at a more suitable time. Now birders have the definitive field guide for any trip to Peru. Some birders come for a more relaxed trip with comfortable lodges in mind, macaw licks, paddling on ox-bow lakes and a leisurely morning in one of the many canopy towers. Access to Manu is strictly limited, and only authorized operators can take visitors into the core areas of the reserve. However, there are adjacent areas where one can see all the Manu bird specialties and the astounding variety of other wildlife. Even here however, the area is so remote that it is really only possible to make this trip as part of a tour or if you are sponsored by a lodge or NGO working in the area.

A typical tour of Manu starts from Cusco and then crosses the last Andean range and drops down the east slope of the Andes into the lowland Amazon forests, and terminating with a return flight to the capital Lima. On the first day, birders traditionally visit the wetlands of Huacarpay where a variety of Andean waterfowl and marsh birds

are abundant. Here the endemic and beautiful Bearded Mountaineer can be seen feeding on tree tobacco. The route then proceeds to the humid eastern Andean slopes where the high grasslands at the Ajcanacu pass hold high altitude Tinamous, Canasteros and Sierra-finches. This life zone is one of the least ornithologically explored areas of Manu and is where we expect several new species for the Manu Reserve to be added in the near future. At this altitude of 3,500 m, the stunted elfin tree-line forest holds several Tanagers, Flowerpiercers and the restricted-range Puna Thistletail, that are found nowhere else in the reserve.

Between 3,400-2,500 m elevations the elfin forest grades into upper elevation humid cloud forest habitat, characterized by tree-ferns and *Chusquea* bamboo stands. Birds such as Gray-breasted Mountain-toucan, Swallow-tailed Nightjar, Mountain Cacique, Barred Fruiteater, Marcapata Spinetail and Collared Jay are typical. As one continues down the road through the unbroken humid forests, birders encounter distinctive and very noticeable 'shifts' in the structure of the bird communities for every 500 meters gained or lost in elevation. The forests below 1,900 m, and in particular, between 1,500-900 m elevations are the home of the national bird of Peru – the Andean Cock-of-the-Rock. A visit to one of their leks (courtship sites) is one of the world's great ornithological spectacles and Manu has to be the easiest place to witness this spectacle. Cloud forests at this altitude are under much pressure in the rest of South America due to cutting for the growing of tea, coffee and coca for the narcotics trade. In Manu it remains intact. Consequently, birds such as Golden-headed and Crested Quetzal, Blue-banded toucanet, Versicolored Barbet, Chestnut-breasted Wren, Cerulean-capped Manakin, Slaty Gnateater, Peruvian Piedtail and scores of tanagers, ovenbirds, and tyrant-flycatchers are often seen. A mornings birding here can be a fantastic experience as large mixed species flocks containing several dozen species of birds move through the cloud forest, some sally-gleaning, some probing crevices, others climbing tree trunks or limbs. Such mixed flocks may contain

Leaving the Andes and foothills behind, birders soon reach the untouched forests of the western Amazon, with the highest density of birdlife per hectare of terrestrial habitat on earth. At this point you must switch from sturdy overland vehicles to motorized dugouts. Here the Manu and Madre de Dios rivers are characterized by a meandering, slow flowing watercourse with white sand and pebble beaches exposed during the dry season from June to October. These beaches provide valuable nesting habitat, and are loaded with nesting and visiting birds. Unlike many other river systems in the Amazon, birds on the Manu River can breed unperturbed. Hundreds of Black Skimmers, Large-billed and Yellow-billed Terns, Orinoco Geese, Pied Lapwings, Collared Plovers and Sand-colored Nightjars nest along the Manu. These beaches are also used by Jabiru and American Wood-storks, Roseate Spoonbills, a variety of Egrets and Herons and in late July and August, many migrating shorebirds from North America on their way to points further south. Due to the natural dynamics of both rivers, many oxbow lakes have been created, and show significant variation in stages of development from recently formed, to very old, overgrown lakes with almost no water. These lakes are characterized by birds such as Sungrebe, Sunbittern, Wattled Jacana, Muscovy Duck, Rufous-sided Crake, Pale-eyed Blackbird, Anhinga, Agami and Boat-billed Herons, Silvered Antbirds, Amazonian Streaked Antwrens, Red-capped Cardinals and the strange prehistoric looking Hoatzin.

The pristine lowland forests hold over 500 species alone and present some of the most tricky but exciting birding in the world. However, in these forests birders must be aware - sometimes it seems as if there are fewer birds than in a European woodland and often only strange calls betray their presence. This is where birders must be patient

because soon enough a mixed flock will pass through containing an astonishing 70-plus species or flocks of parrots or parakeets such as the a brightly coloured Rock Parakeets make a dash out of fruiting trees. A good ear is essential as many species are only located when the song or call note is recognized. Many birds live only in the canopy of the forest and are difficult to see, others occur only in the middle and under-story, whilst some are strictly terrestrial. Many specialize in creeping up trees and probing for insects, others sally out to catch flying insects or turn over leaf litter in search of arthropods or fallen seeds and fruits. Forest-falcons and other winged predators lurk in vine tangles ready to snatch a small bird out of a mixed species flock. Large stands of woody *Guadua* bamboo hold some of the rarest and most sought after birds such as Rufous-headed Woodpecker, Manu Antbird, White-cheeked Tody-flycatcher, Peruvian Recurvebill, and Long-crested pygmy-tyrant. Recently formed islands and river-edge habitats hold willow-dependent and other restricted-range species species such as Orange-headed Tanager, River Tyrannulet and Rufous-fronted Antthrush. In some instances, when both canopy, and mid-storey mixed feeding flocks momentarily come together in such habitats up to 70 species of birds may be present at one time!

How to Look for and Watch Birds in Manu

The Manu area represents one of the greatest challenges for a birder. Armed with the new *Birds of Peru* field guide and with a bit of homework behind you (on not only the distribution and plumage characteristics, but also the vocalisations) you will be able to identify a basket full of birds. However, some birds will go unidentified, and birders must have a healthy willingness to let such observations pass unidentified unless, of course, you have an experienced bird tour leader with you. Ornithologists and birders who have lived and worked in Manu for long periods still see new species that have eluded them for many years, often in an area they have walked countless times before. Every excursion into the Manu Biosphere is a learning experience!

When choosing a tour to Manu, some factors should be taken into account. Is the area protected? Are the large indicator species such as curassows (*Cracidae*) or trumpeters (*Psophiidae*) still occur there? Does the tour have access to an ox-bow lake and canoes on the lake? Does it have access to the rainforest canopy in the form of canopy towers or walkways? Are there stands of bamboo that trails pass through and are there plenty of trails traversing different forest types? Is there a nearby macaw lick? Are the boats and vehicles reliable? Does the tour leader know the birds and their calls? If the answer to all these questions is yes, then you should have a very good birding tour.

There are several lodges in the Manu that are superb birding locations to base yourself at and on a typical trip you would stay at 4 at least. Wherever you go, explore all the possible habitats at your disposal and make sure you walk through different parts of the forest on different trails. Try to visit seasonally flooded, terra firme and transitional floodplain forests, bamboo patches, ox-bow lakes, and river margins, and use any canopy towers or platforms available. Birds in the cloud forests and highlands are active through most of the day with no discernable peak in activity, especially if there is mist and light drizzle. In the lowland rainforests, birds are most active from dawn until about 10am and so early starts are essential (a small number of birds are even most vocal during the predawn chorus). It is probably wise to take a siesta during the heat of mid-day/early afternoon, and follow it with some late afternoon and night birding. Walk slowly and be alert for bird sounds. Importantly, learn to recognise the distinctive sounds of an approaching canopy or under-story flock (see below) and the special calls made by antbirds at an army ant swarm.

Some birds only sing for a few weeks out of the year (this should be an integral part of your pre-tour homework) and even then many are very, very hard to see, for example the antpittas (*Formicariidae*) and the rails and crakes (*Rallidae*). Patience is needed for many of the species and, on a first trip to Manu, some of the smaller tyrant-flycatchers (*Tyrannidae*) and antwrens (*Thamnophilidae*) will initially go unidentified. Around lodge clearings, over rivers and along lake edges, many of the more prominent species such as herons (*Ardeidae*), parrots (*Psittacidae*), larger flycatchers and oropendolas (*Icteridae*) will be seen, but it is in the forest interior that the more enticing and mysterious birds such as antbirds (*Thamnophilidae*), ovenbirds (*Furnaridae*) and manakins (*Pipridae*) will be found.

Canopy and Understorey Mixed Flocks

Many different species in the Amazon flock together in mixed feeding flocks that forage through the forest together. There are two main categories: canopy flocks and mid-, or under-storey flocks that both defend a communal territory against neighbouring rival flocks. Understorey flocks tend to roost near water and can often be found near quebrada's at dawn and dusk. When the two kinds of flock join together, there can be as many as 80 species of birds together, with each species represented as a pair.

Each flock has a leader, the cohesive element in the group, and it is always of the same species. In Manu for example, canopy flocks are led by White-winged Shrike-tanagers (*Lanio versicolor*) and under-storey flocks are led by the noisy and highly active Bluish-slate Antshrike. The advantage of being part of a flock is that there are more pairs of eyes to look for predators such as forest-falcons (*Micrastur sp.*). All flock members have distinctive alarm calls that other participants recognise as warning signals. There is little competition for food amongst flock members. Each species uniquely partition food resources by subtle differences in their foraging ecology. For example, different *Myrmotherula* and *Epinecrophylla* antwrens glean the undersides of leaves or investigate dead leaf clusters but at different heights; woodcreepers probe into bark; foliage-gleaners rummage in dead palm leaves; tanagers search for small fruits; trogons for large arthropods; and flycatchers seek winged arthropods in the shady understorey. The list goes on and on. Learning to recognise the calls of the flock leaders will help greatly when trying to locate these species-rich flocks. Remember, in the Amazon, birds of a feather do not necessarily flock together!

Army Ant Followers

Obligate army ant followers are bird species whose ecology is tied closely to that of army ants. In fact they are rarely found away from them, unless it is to move or disperse between different ant swarms. These species don't actually eat the highly carnivorous ants, which are full of formic acid and unpalatable, but prey on the fleeing grasshoppers, spiders, other arthropods and even frogs, that are trying to escape the marauding hoards of ants that carpet the forest at all levels. This is one of the great wildlife experiences of the Amazon and to watch an ant swarm in full swing with attendant birds is a wonderful bird-watching spectacle. Many of the species that attend the swarm belong to the typical antbird family, which, although consisting mostly of non ant-following species, derives its name from a few species of professional army ant followers, such as the White-throated Antbird and Black-spotted Bare-eye. Other antbird species only attend opportunistically at swarms. These include the Sooty, Plumbeous, and White-browed Antbirds.

Manakins (Pipridae)

Some of the most enigmatic Amazonian species are the Manakins. These compact and energetic birds can be difficult to see unless you find a display area. Most hover-glean for small fruits and many have modified flight feathers that make whirring and snapping sounds. They live mainly in the forest interior, sometimes coming to the forest edge for fruits. They have elaborate courtship displays that vary from species to species, where two or more brightly coloured males display at courtship arenas known as *leks*. These leks can be found scattered around the forest. Whilst in some areas of lowland Manu, three or four species may lek in close proximity to each other (e.g. Round-tailed, Blue-crowned and Blue-backed Manakins), there are subtle differences in the exact positions of the leks between species. Species select lekking sites based on topography, vegetation complexity at different heights, the proximity to food and other resources, the proximity to other leks, and probably the local abundance of females.

In comparison to the gaudy and spectacular males, the females are much duller in appearance, being generally shades of olive. To illustrate just how complex manakin courtship displays can be, take a look at the Blue-backed Manakin (***) . Two males perch on a gently sloping branch about a metre off the ground, giving a loud characteristic song throughout the day. When a female arrives, attracted by the singing, the males go into full display, cart-wheeling over each-other, with bouts of sliding along the display branch, whilst calling more and more rapidly until they suddenly stop dead. Then one of the male's will emit a loud 'swee..ee..eek'. After that only one male continues to display, crouching and singing softly and periodically making short, slow circular flights with rapidly fluttering wings. This may culminate in copulation.

Cotingas (Cotingidae)

Cotinga's are another gaudy and brilliantly plumaged family that, like the manakins, are strictly American. Many species are showy, with deep reds and shades of mauve, purple and blue, such as the common group of lustrous blue cotinga's. Cotingas are predominantly frugivorous and are largely confined to life in the forest canopy. Species typically found in Manu include the dazzling Spangled and Plum-throated Cotingas of the lowlands, and the furtive Barred and Band-tailed Fruiteater's of the higher elevation cloud forests, which are also home to the Andean Cock of the Rock. Along with the strange looking Amazonian Umbrellabird with its crown of feathers and long bare wattle, these species are real prizes to be found and enjoyed by visitors and many can be seen with ease if you have access to the forest canopy via a platform or canopy tower.

Toucans, Aracaris and Toucanets (Ramphastidae)

Toucans and their allies, the aracaris and toucanets are often found feeding in the same fruiting trees as cotingas (*cotingidae*) and other frugivores. They are South American counterparts to the hornbills (*tockus sp.*) of the Old World and are readily recognised by their large colourful bills and the astounding ability to lay their tail flat over their backs. Raucous and brightly coloured, this family is a conspicuous member of the forest bird community from tree-line down. They nest in holes in trees and roam the forest in groups searching for fruit, supplemented with insects and not beyond raiding nests of other birds for nestlings and eggs. Aracaris, the smaller members of the toucan family, include chestnut-eared - perhaps the most familiar, ivory-billed, curl-crested, - with its curiously curled, plastic-like crown feathers, many-banded and lettered - named for the strange scribble-like markings along the cutting edge of the bill. Among the toucanets are the Andean, blue-banded and the croaking golden-collared. The sight of a Gray-breasted mountain Toucan perched amidst red bromeliads in the cloud forest will not be forgotten. The large toucans of the Amazon that are a characteristic sound of the late

afternoons and evenings in the forest include the channel-billed and white-throated toucans that sit up in bare trees and yelp in unison as the sun sets over the rainforest canopy.

Tanagers (Thraupidae)

The treetops are also the home of another typically American family, the tanagers. They are important distributors of seeds of rainforest trees, shrubs and vines. The renowned ornithologist Alexander Skutch once wrote: “To stand in bright morning sunshine before a tree laden with ripening berries is one of the great delights of bird-watching in tropical America. Among the constantly changing throng of birds that gather for the feast are brisk, tiny manakins, flycatchers large and small, plainly clad thrushes and vireos, wood-warblers and woodpeckers. But, nearly always, the tanager family provides the greatest number of species and individuals and most of the colour”, said renowned sage Alexander Skutch. Tanagers have perhaps reached their greatest diversity and gaudiness in the misty cloud forests and foothills of the Andes, but they are well represented in the Amazon. They draw attention to themselves with distinct foraging calls as they move through the forest canopy, often accompanying other predominantly frugivorous and omnivorous species in mixed canopy feeding flocks or feeding aggregations at fruiting trees. Honeycreepers and Dacnis are specialised tanagers that are designed to extract nectar from flowers; their bills are thinner and longer than those of true tanagers and are well suited for probing the corolla of flowers and extracting nectar with a fringed tongue. They are brightly coloured little birds, the males being strikingly black and purple, deep blue, turquoise, green and bright yellow, although the females are duller. At a fruiting or flowering tree in the forests of the Manu Biosphere Reserve, the following might be seen in the same tree at the same time: green and gold, slaty, saffron-crowned, orange-eared, golden-eared, beryl-spangled, blue-capped, blue and black and golden tanagers, blue dacnis, orange-bellied euphonia and more,—a vision to whet anyone’s appetite for Amazonian birding.

Typical (Thamnophiidae) and Ground Antbirds (Formicariidae)

The majority of the antbird family are to be found occupying various niches in the forest away from ant swarms. They vary in size from small to medium sized birds and up to 30 or 40 species may be found at the same locality in the Amazon. They consist of several groups: antshrikes, antbirds, antwrens, gnateaters, anthrushes and antpittas. The latter two are terrestrial and comprise of the separate ground-antbird family. They are inconspicuous and shy and often only betray their presence with far carrying calls and songs. Antpittas are the stuff of legend and their names often reflect that—for example, the Elusive Antpitta! (*Grallaria eludens*).

Antwrens, antshrikes and antbirds are more easily seen species, occupying a variety of microhabitats, often accompanying mixed species flocks. Most show marked sexual dimorphism with males being shades of grey and black and females exhibiting shades of brown, buff and rufous. They feed by gleaning foliage for arthropods at all levels from the ground to the sub-canopy. Some are restricted to bamboo, such as the Ornate and Iherings Antwren; some to lake edges and swamps such as the Band-tailed and Silvered antbird. A number of species are highly arboreal and never descend far from the canopy, like the Chestnut-winged Antwren, the globally-threatened Yellow-rumped Antwren or Sclaters Antwren. Other species show a distinct preference for the understory microhabitat features such as White-browed and Black-faced Antbird, Dusky-throated Antshrike and Long-winged Antwren.

Predators: Falcons, Kites and Eagles (Accipitridae)

Understorey birds have to deal with predators in the form of forest-falcons that lurk in vine tangles following mixed feeding flocks, just waiting for a chance to snatch an unwary bird. Birds of prey in general, have occupied virtually every rainforest niche. Plumbeous and Swallow-tailed Kites hawk above the rainforest canopy for large flying invertebrates. Double-toothed kites follow monkeys, snatching arthropods flushed as the primates move through the forest. *Accipiters* such as Bicoloured and Plain-breasted Hawk dash through undergrowth also after smaller birds. The Snail Kite and Black-collared Hawk specialise in lake edge habitats. Ornate, and Black Hawk-Eagles share the canopy with other species such as the Short-tailed and Slate-coloured Hawk. The largest diurnal predators are the Black-and-Chestnut Eagle and Solitary Eagle of cloud forest habitats and the Harpy Eagle and Crested Eagle of the lowland forests. These eagles reach up to 40 inches in length and they feed on large arboreal mammals such as monkeys and sloths. Despite their size, the Harpy and Crested eagles are difficult to see as they seldom soar and usually keep within the tree crowns and usually only show themselves when crossing rivers or clearings.

Nocturnal Predators (Strigidae and Caprimulgidae)

At dusk, the diurnal hawks, eagles and falcons change shifts with the owls, while the nocturnal invertebrate population is also subject to predation by a number of species including nighthawks, nightjars and potoos. Owls (Strigidae) are most often heard rather than seen. Spectacled Owls give their long reverberating calls, screech-owls hoot around lodge clearings, the magnificent crested owl replaces the eagles hunting in the sub-canopy and the tiny Amazonian and Yungas Pygmy Owls trills in the canopy between insect-hunting bouts. The cosmopolitan nightjars and nighthawks occupy various niches, searching for insects and moths in the canopy, along rivers and in the under-story. Potoos (***) , which have evolved in convergence with the Old World frogmouths, sit motionless all day mimicking dead tree limbs and they become active at dusk giving haunting cries as the sun sets or at full moon, and silently float through the forest catching moths during the night.

Along the Rivers and Oxbow Lakes

Many Amazonian birds are best looked for and found along rivers and oxbow lakes. As Amazonian rivers drop in level during the dry season between June and September, many birds take advantage of the exposed sandy beaches to raise their young. On little disturbed rivers such as the Manu, Orinoco Goose, Muscovy Duck, Pied Lapwing, Collared Plover and Sand-coloured Nighthawk can be found nesting. Two freshwater terns, the dainty Yellow-billed and the more powerful Large-billed Tern, share the fish according to size and take advantage of the beaches for breeding along with Black Skimmers. Hidden just a few metres inside the forest are the ox-bow lakes formed as the rivers meander and finally cut through the narrow neck of an exaggerated loop, leaving the old river bed as a lake. The successional 'life cycle' of these lakes—from being newly created to eventually returning to forest after a lengthy process of colonisation by aquatic vegetation and colonial plants such as *Cecropia sp* followed by *Ficus spp.*,—can take several hundred years. Oxbow lakes create a distinct habitat that is used by the river-nesting terns and ducks, whilst numerous heron species are another common feature. The more conspicuous species, such as Snowy and Great Egrets, Cocoi Heron and Roseate Spoonbill are usually seen along the rivers, along with American Wood-stork and the giant yet improbable Jabiru! The more shy and unobtrusive species are, however, mostly found under the overhanging vegetation,

along the shady shores of the ox-bow lakes. Agami Heron and both Striated and Boat-billed Heron find a home here along with Green Ibis and Anhinga, the latter often swimming with just its elongated neck showing above the water while the body remains submerged, giving rise to another of its common names - 'snake-bird'.

One strange ox-bow lake inhabitant is the hoatzin, a prehistoric-looking turkey-like bird that grunts and hisses in the lakeside vegetation. The Hoatzin, despite its looks, not prehistoric at all. It nests on flimsy stick platforms in bushes above the water but its most unique characteristic are the 'hooks' situated and protruding from the bend of the wing of the young nestlings. This enables the young birds to clamber back up to the nest after they have ejected into the water to escape the attentions of a predator—a neat defence mechanism and a good survival strategy. The hooks become restigal when the birds reach adulthood.

Tyrant- Flycatchers (Tyrannidae)

The tyrant-flycatcher group is one of the most species rich Neotropical bird families including small tody-tyrants and tody-flycatchers, canopy Elaenia's and tyrannulets, large noisy attilas and the obscure mourners. Many conspicuous species of tyrant-flycatchers are evident on the tranquil oxbow lakes and rivers, the most common being Tropical Kingbird, Social and Grey-capped Flycatchers, and both Great and Lesser Kiskadee's. Not all, however, are found along the lakes and rivers. Indeed, the vast majority prefer forest interior habitats, occupying a rich diversity of niches from ground-level to the forest canopy. Some also specialize in bamboo thickets, such as the Dusky-tailed and Large-headed Flatbill, White-cheeked Tody-tyrant and Flammulated Bamboo-tyrant. Others, such as the Sulphury Flycatcher are dependent of palms. Many tyrant-flycatchers are canopy dwellers and they can be almost impossible to see and identify until birders become familiar with their calls and song. The cloud forest particularly has a myriad of small flycatchers that pose many identification problems.

Parrots, Parakeets, Parrotlets and Macaws (Psittacidae)

Wherever you are in Manu - canoeing on an oxbow lake, taking a leisurely river trip or walking through the mosaic of forests on a sunny afternoon—the constant chatter of parakeets or the explosive cries of the macaws are a constant companion. Noisy, gregarious and gaudy, parrots such as the tiny Dusky-billed Parrotlet, flocks of White-eyed, Dusky-headed or Cobalt-winged Parakeets, and even the bigger, stockier Yellow-crowned, Scaly-naped or Mealy Parrots are a common sight throughout Manu. The large macaws, and their smaller relatives - Chestnut-fronted and Red-bellied Macaws are an integral part of the makeup of Manu.

No trip to the tropical forests of Manu would be complete without a visit to one of the great Neotropical wildlife spectacles: a macaw lick. Several clay-licks are known from the lowland Manu region and most are easy to visit. Great numbers of parrots gather at these traditional sites to eat clay, which is essential to their digestion, acting as a neutralising agent for the mild poisons that exist in the limited variety of fruits they are obliged to eat during the dry season from July to September. Just after dawn, huge numbers of Blue-headed, Mealy and Yellow-headed Parrots, are joined by a smaller number of gaudy Orange-cheeked Parrots (*Pionopsitta barrabandi*) gathering at the lick. On occasion, Dusky-cheeked and Cobalt-winged Parakeets may also be present, adding to the astonishing clamour. After they have fed sufficiently, there follows a massive coordinated response to a seemingly invisible signal, and fly from the lick in a breathtaking crescendo of noise and colour, circling briefly before heading into the forest, leaving an eerie silence in their wake.

Now the macaws begin to gather. They arrive in pairs and family groups of three and four, calling in a subdued manner, and begin to gather in the trees above the lick. As the numbers grow they seem to gain in confidence and drop lower and lower until they are just above the lick. Suddenly, one brave individual drops onto the clay bank, signalling for all and sundry to join the party. For perhaps an hour the great colourful macaws caw and squabble on the bank as they get their bi-daily intake of clay. Suddenly, as with the parrots that preceded them, they leave the lick in a swirling multicoloured mass and break up into family groups and pairs to get on with their daily routine in the forest. The lick is then deserted and silent until the next day.

Birding in Manu holds something for all and here we have mentioned only a few of the families and species to be found. There are plenty of easy-to-see and interesting birds for less intense observers and difficult identification problems to keep in-depth observers busy for years. There are still mysteries to be solved and too many questions to be answered in a single lifetime. You will find yourself asking, why do they fly in large numbers over the river at dusk? What does that bird feed on? Why does it do that? Where does it nest and what does its nest look like? One thing is for sure, Manu will never lose its attraction and magnetism for birdwatchers, and ornithologists alike.

Birding Tools in Manu

Binoculars with good light gathering capabilities and close focusing in the 8x to 10x range are recommended. A spotting scope with a 25x–50x fixed wide angle lens can be useful for more lethargic species such as Trogons and Puffbirds, and a great asset if you have access to the rainforest canopy in the form static tree platforms. A telescope is a great help for scanning the distant tree crowns for Cotingas or observing feeding aggregations of birds at a distant fruiting tree. A recorder of some kind and a shotgun microphone can be a useful tool for enticing difficult species out of their tangled abodes, though experience and care is needed with this kind of equipment. For a trip to Manu layers of clothing are the way to go as you will be birding in the damp and cool cloud forests, and Andean grasslands as well as the hot and sticky Amazon rainforest. A fold away umbrella is recommended rather than rain jackets which are too hot in the lowlands. Insect problems are few and one bottle of repellent for the bamboo should do. Waterproof footwear (wellies or neos) are recommended for muddy trails. A good headlamp with spare batteries and bulb is essential for night-birding and dimly lit lodges.

Recommended literature includes:

*Birds of Peru. Thomas S. Schulenberg, Douglas F. Stotz, Daniel F. Lane, John P. O'Neill and Theodore A. Parker 111 Helm and Princeton Press. 2007. ISBN 978-0-7136-8673-9

Mammals and Birds of the Manu Biosphere Reserve, Peru. Patterson, Stotz and Solari. Fieldiana Zoology #110. Field Museum of Natural History. 2006.

Birds of the High Andes. Jon Fjeldsa and Niels Krabbe. Apollo Books. 1990. ISBN 87-88757-16-1

The Birds of Machu Picchu and the Cusco region. Barry Walker and Jon Fjeldsa. Nuevas Imágenes SA. 2005. ISBN 9972-9015-9-9.

Neo-tropical Rainforest Mammals. Louise H. Emmons. University of Chicago Press. 1997. ISBN 0-226-20721-8.

Butterflies of South America Bernard D'Abbrera. Hill House 1984. ISBN 0-9596369-2-0

Peruvian Wildlife – a visitor's guide to the Central Andes. Barry Walker, Huw Lloyd and Gerard Chester. Bradt Travel Guides 2007. ISBN 1-84162-167-6

Birds of Tropical America. Steven Hilty. Chapters publishing 1994. ISBN 1-881527-56-5.

A Neo-tropical Companion. John C. Kricher. Princeton. 1989. ISBN 0-691-08520-8

Tropical Nature. Adrian Forsythe and Ken Mayta. Charles Scribners. 1972. ISBN 0-68417964-4

** Essential for birders*

Many travelling birdwatchers compile their own customised field guides by scanning or colour photocopying existing plates including relevant paintings from the excellent Handbook of the Birds of the World series by del Hoyo, Elliot and Sargatal (Lynx Editions, Barcelona) and other bird family monographs that seem to be appearing in increasing numbers at the moment. Whichever aids to birding you carry, remember that the rainforest is always humid and that equipment must be waterproofed or be tried and tested in humid conditions. Equipment failure whilst on a birding trip can be a very frustrating experience indeed.

Factsheet

Who runs birding trips to Manu?

American Birding Association
Birdfinders
Birdquest
Birdtreks
Cheeseman's Ecological Safari's
Field Guides Inc.
Manu Expeditions Birding Tours
Ornitholidays
Rockjumper Birding Tours
Sunbird
Tropical Birding
Victor Emmanuel Nature Tours
Wings

Where to stay in Manu?

Cock of the Rock Lodge

Cock-of-the-Rock Lodge is located in cool, mosquito-free cloud forest at 5000 feet (1600 m) of elevation along the amazingly wild single lane road from Cusco to the Manu lowlands. From Cusco, it takes 6 hours or so to drive the winding 110 miles (180 km) to this biological Eden, but most travelers prefer to spend 8-10 hours or days along the route to savor the eye-popping scenery and excellent birding. CORL is located in the Kosñipata Valley of South Eastern Peru and is named for the world's largest known display ground of the blazing scarlet Andean Cock-of-the-Rock, Peru's National Bird. Cock of the Rock Lodge has 8 double bungalows arranged around a tropical garden. All have en suite toilet and shower facilities, hot water etc and the spacious dining room overlooks a garden with hummingbird and other feeders.

Paradise Lodge

Just 5 minutes from Cock of the Rock Lodge this is another alternative in the Cloud Forest. Counts on 6 rooms with private bath, hot water and a dining room. Has a very birdy garden with feeders. The Paradise Lodge is nestled in the cloud forest between the Kosñipata and San Pedro rivers, with magnificent views of the endlessly varied green tones of the surrounding forest. The lodge has a capacity for 16 people in either double or triple rooms. Every room has a private bath with hot, towels, bio degradable shampoo and soap. The Manu Paradise Lodges principal dining room is very spacious - capacity for 24 and a panoramic view of the Pilcopata and San Pedro rivers.

Manu Cloud Forest Lodge

This lodge is located between cloud forest-covered slopes and adjacent to a narrow 400-foot-high waterfall. Rushing streams next to the site are two of the small water courses that descend from the mountains to the Qosñipata River. This small 16 bed lodge can be reached in six to seven hours from Cusco after an exciting drive across the towering Andes. Some of the amenities of the lodge include private bathrooms with hot water, private verandas overlooking the pristine Union creek, and a sauna to relax after the daily activities.

Amazonia Lodge

Family run converted tea hacienda in the Manu foothills right at the roads end in Atalaya on the other side of the Madre de Dios River. Lots of charm and personalized service. Good rooms with a balcony overlooking a lush tropical garden with Butterfly bushes (*Vervania*) and feeders for Hummingbirds and Tanagers. Shared bathroom facilities with hot water. Spacious dining room. Good trail system. Over 600 species of birds have been recorded here.

Pantiacolla Lodge

Pantiacolla Lodge is set in beautiful rainforest on bluffs overlooking the turbulent Alto Madre de Dios river. Nestled in the Manu foothills at the base of the Pantiacolla Mountains, the mountains rise to 1200 m or more behind the lodge and are a contributing factor to the enormous variety of wildlife that inhabits the area. Accommodation at the lodge is provided in bungalows with a total of 14 double rooms giving a maximum capacity of 28 persons. Paths lead from the bungalows to showers and flush toilets, and to a spacious and comfortable dining area and bar. Over 500

species of birds have been recorded here! Many of the species are endemic to the area, very rare or found at altitudes different from their normal range. Pantiacolla keeps constructing new trails, platforms and hides.

Manu Learning Centre.

The Manu Learning Centre is located on the Madre de Dios River not far upstream from Pantiacolla Lodge. MLC is designed to function as a multi-use facility to provide field researchers, educational groups, volunteers and guests with comfortable accommodation and space in which to work. Fundo Mascoitania attracts an array of parrots and macaws thanks to the spectacular red mineral lick, or Collpa carved out by the Alto Madre de Dios river. This Collpa is the only one of its type in the area, and is visited daily by hundreds of colorful and noisy parrots and macaws, as well as guans, pigeons and doves. These in turn draw raptors such as the ornate hawk eagle and crested eagle. It is one of the best places in the world to see the endangered Blue-headed Macaw. Manu Learning Center also boasts two large mammal clay licks which attract endangered animals as well as large groups of white-lipped peccary and their natural Jaguar predators.

Manu Lodge

The Manu Lodge is constructed entirely of fine mahogany cut from logs left on the beaches of the Manu by the annual January-March floods. It is located on the shores of an ox-bow lake on the Manu River. The lodge is elevated on reinforced stilts and is divided into two communicating blocks. A and B. Block A is in three levels, a spacious lower level containing a bar, meeting area and a dining room/lounge for up to 44 people, a smaller second level containing two double rooms with a magnificent vista of the lake nearby, and a still smaller third level that features an observation room. Block B contains ten double rooms spaced along a wide, screened corridor/porch. The entire lodge, including both blocks and porches, is screened and accessible from outside through screened double doors. The kitchen, showers and latrines are located away from the main building in clean, comfortable buildings.

Romero Rainforest Lodge

Due to open in early 2009 after being refurbished, this lodge is along the Manu River just one hour from the confluence with the Madre de Dios River and the Boca Manu Aerodrome. The lodge counts on 8 twin rooms and 2 singles with private bathroom facilities and hot water in each room. This is a tastefully decorated boutique lodge in a privileged situation with an extensive trail network covering all kinds of micro-habitats and close to ox-bow lakes. A separate dining and lounge area serves cold drinks and good food. A great birding lodge with Black-faced Cotinga's in the garden and over 550 bird species. Watch this one. It will become one of the best birding lodge destinations in Peru.

Casa Machiguenga

100% owned and managed by Matsigenka natives_and_located as deep within the Manu National Park as visitors are allowed, near Cocha Salvador Lake. Excellent access to virgin forest and oxbow lakes Abundant and well habituated fauna (incl. giant otters, monkeys, birds, ungulates) and 500+ plus species of birds in the area and Black-faced Cotinga is here. Established and run by native Matsigenka amerindians from two communities located in the heart of the Manu National Park; caters for eco-tourists interested in a cultural experience; A bit remote and difficult to access. Has 10 double

bungalows. Accommodations are simple rooms with beds and mosquito nets, rustic furniture and communal dining areas. More than adequate toilet and shower facilities are on hand. Does not provide food.

Manu Wildlife Centre

Manu Wildlife Center consists of 22 double bungalows built in the style of, and using the same materials as the local Machiguenga indigenous communities. Local wood, bamboo and palm fronds for roofing are used. All materials used have been sustainably harvested or brought in from distant areas. Each room has good quality foam mattresses and all beds have cotton sheets and quilts (best for hot tropical conditions). Although all the rooms are screened with imported insect netting, beds are furnished with individual mosquito nets. Furniture includes bedside tables and writing tables. The bungalows are arranged around a pleasant and well planned Amazonian garden with plants and shrubs that attract birds, butterflies and mammals. All bungalows are private and separated from each other for privacy and all have large windows facing the forest and garden. All the 22 bungalows boast private toilet and shower facilities. Hot and cold water is always available and all toilet facilities are flush. The dining area is separate from the other facilities but close to all bungalows and the nearby kitchen area. Food is good and wholesome not gourmet, using a variety of fresh vegetables, fruits, grains and meats in our menu. Our cooks are used to providing for vegetarian diets. There is a separate bar and lounge area which is located a short distance from the dining area. The lodge is strategically located in an area of forest that counts on the highest diversity of micro-habitats in the Manu area. This means that there are more species of animals, birds, reptiles and insects than elsewhere in Manu. *Terra-firme*, transitional floodplain, *varzea* and bamboo forest is found close to the lodge plus successional willow and cane stands on beaches and river islands, resulting in the highest bird count in the Manu area. An astounding 550+ species of birds have been recorded around the lodge.. The Blanquillo Macaw and Parrot lick is only 25 minutes away by river and we use blinds to get you close to this amazing wildlife spectacle, where up to 200 Macaws and many hundreds of their smaller relatives come to eat clay essential to their digestion. There are 4 ox-bow lakes in the area and we have floating platforms so that access to the lakes ensures that all lakeside fauna can be readily observed. There are 3 families of the endangered Giant Otters on these lakes and small streams. About an hours walk through the forest is a large mammal lick where Tapirs, the largest South American land mammal, regularly come for minerals. At night Brocket Deer and other animals share this necessary ingredient to the digestive system. There is a large, raised blind here equipped with mattresses and mosquito nets for those who want to spend the night in comfort observing these nocturnal creatures. During the day several species of small forest Parakeets and Parrotlets as well as Guans, Curassows and Black Spider Monkeys regularly visit the lick. Canopy access is easy at Manu Wildlife Center, we have a canopy tower strategically placed just 10 minutes walk from the lodge. There are in total two static canopy platform in large canopy emergents that are accessed by a metal, spiral stairway that anyone can use at any time.

How to get there?

From Europe without US transit – KLM, Iberia and Lufthansa fly to Lima. From North America - American, Delta, Continental, LAN and Air Canada, all fly to Lima.

The jumping off point for Manu is Cusco at 3300 meters above sea level in the Peruvian Andes. Cusco is a 1 hour jet flight from Lima which is where all international flights arrive. Carriers include Lan, StarPeru and TACA. In Cusco there are a wide variety of hotels from 5 star to cheap and cheerful. From Cusco it is possible to self drive as far as Atalaya. In reality access and logistics are so complex and time consuming, taking a tour with a reliable operator is recommended. There is an intermittent and unreliable air service to the Boca Manu Aerodrome in the lowland rainforest from Cusco. The aerodrome is one and a half hours from Manu Wildlife Centre Lodge and one hour from the Romero Rainforest Lodge

When to go and climate?

Anytime is good. A birding trip to Manu is possible at anytime of year but there is more rain from December to April. Cold snaps (Friajes) from the south are periodic in the May to July period and can affect birdsong. The area has a wide range of climates, from the cold, dry Andes to the hot, humid Amazon forests. There are however, no long term records of rainfall or temperature in the park, and up to 1985 continuous records of rainfall were only available for two years (1976 and 1982). At the Biological Station of Cocha Cashu (400m), the rainfall between September 1976 and August 1977 was 2100mm. There is a rainy season from October to April with an average monthly rainfall of more than 200mm. From early May to late September rainfall decreases to less than 100mm per month. There is a slight variation of air temperature during the year. The coldest month is June with an average temperature of 11.1 C the hottest month is October with 25.4 C. There are virtually no records of rainfall within the park above 650m. At Pilcopata (650m) the mean annual rainfall (1971-1980) was 3929mm and all months have more than 100mm of rain. July is the driest month with an average rainfall of 188mm. Higher up into the Andes rainfall drops again, and temperatures fall significantly to average a few degrees above zero. Fog is common all year round in montane forest regions.

Barry Walker is owner of Manu expeditions Birding Tours and has been birding in Manu since the early 80's when Manu was still unknown to the outside world.