Multi-ethnic Bird Guide

of the Austral Temperate Forests of South America

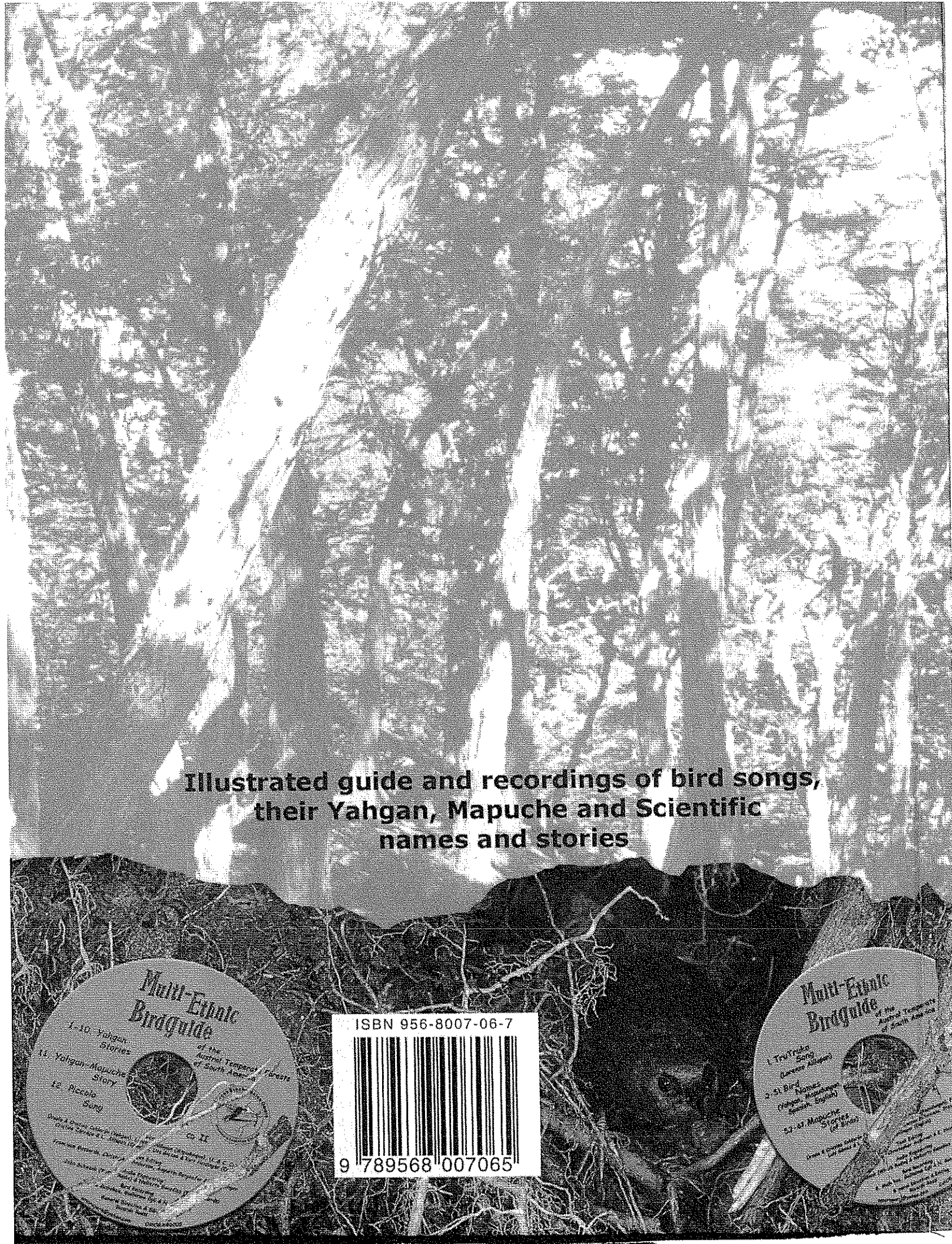







Ricardo Rozzi
& collaborators

EDITORIAL FANTASTICO SUR



Illustrated guide and recordings of bird songs, their Yahgan, Mapuche and Scientific names and stories

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Multi-ethnic Bird Guide

of the Austral Temperate Forests of South America

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Mapuche bird names and stories
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Yahgan stories: Cristina Zárraga & Francisca Massardo

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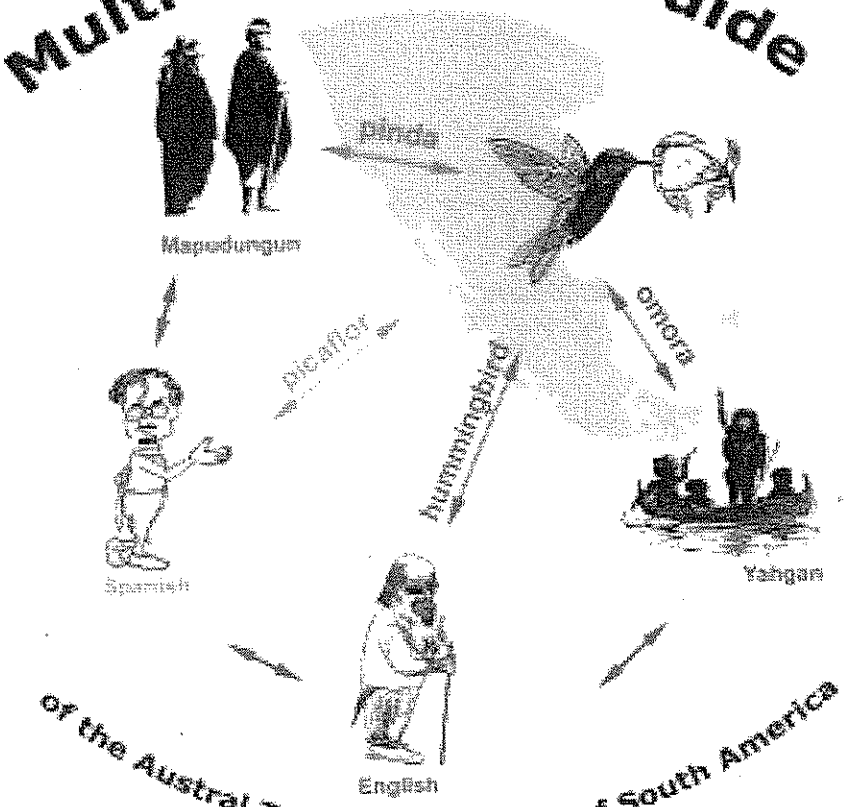
Multi-ethnic Bird Guide



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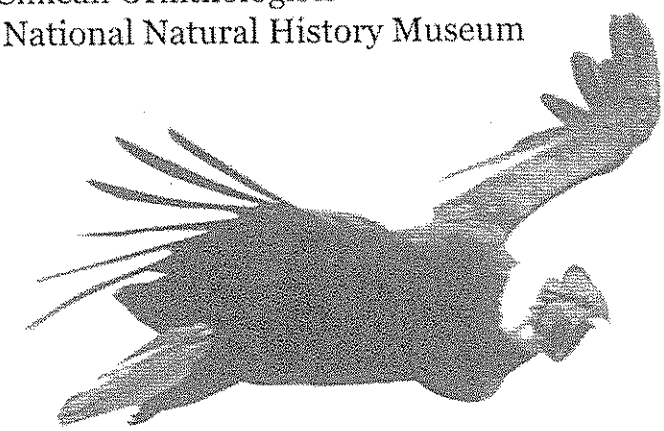
Editors
Fantástico Sur

PREFACE

The forests of southern Chile and Argentina are unique ecosystems and they are highlighted by their great richness and productivity. A relevant element of their diversity is the avian fauna, which are very close animals for humans; they are in our dreams and our fears, in myths and legends. They are in the stories that our grandparents pass down to us, and they are in the national coat of arms of many nations (e.g. the Andean condor is on the shield of Chile, Bolivia, and Colombia). With their calls and cries, with their flagrant presence, they are part of our daily life. Of course, the birds are in the forest, walking on the soil, jumping between the bushes, clambering along the trunks and flying over the canopy. Birds have an important role in the maintenance and function of the forest. There are species that excavate the soil. There are those that disperse seeds, others that consume insects and those that feed upon dead animals. Birds tell us about the health of the forest, and there are some "accusers" that disappear when the trees are cut, with their absence indicating to us that this environment is losing some of its qualities.

The reforms that are being developed now in Chile's education system have as their objective the incorporation, as a fundamental element of learning, the values of the environment that surrounds the schools, consequently giving the student the opportunity for a concrete experience. In such context, this book is an invitation to look, to see and to listen. It is a call to the young people, from ages 1 to 99, to be entertained and to learn. It is a call to know about bird life and by way of them to understand the forest; because understanding the forests, and with them nature, we all will be able to have a better life.

Juan C. Torres-Mura
Ex-President, Union of Chilean Ornithologists
Curator of Ornithology, National Natural History Museum
Santiago, Chile

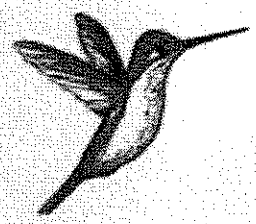


August 2001

INTRODUCTION

Ricardo Rozzi

I. Collective Work



The bird songs, names and stories recorded on the CDs of this guide book begin with the song of the hummingbird, the cry of the barn owl, the percussion and calls of a woodpecker family, together with the murmur of the Robalo River and the music of Mapuche poet Lorenzo Aillapan's *trutruk a*. The auditory journey continues with the vocalizations of fifty birds that inhabit the forests of austral South America along with their Yahgan, Mapudungun, Spanish and English names. Then, we present seventeen Mapuche stories, ten Yahgan stories and one Mapuche-Yahgan story of the austral thrush, considered the orchestra director of birds and austral nature. The journey ends with the song of the hummingbird, the austral thrush, and other birds, together with the wind and music of *Gli Uccellini*, a musical piece for the piccolo by Chilean composer Andrés Alcalde. As a whole, the recordings of this guide book express the voices of multiple species and indigenous, rural and urban cultures, whose lives are interwoven in the temperate forest region of South America.

The recordings also manifest a collective character in the making of this guide, given that the varied voices involve many different birds and people. The collective character of the bird songs and narratives registered in this book is even greater if we consider that these come from evolutionary processes and oral traditions. The birds have sung in the austral forests for millions of years; the Mapuche and Yahgan peoples have transmitted their bird stories from generation to generation for hundreds or thousands of years. These voices, then, inherit a long co-evolutionary history between the diverse birds and human beings that have co-inhabited, and still co-inhabit, the forested regions of austral South America. The records of this bird guide offer us today a biocultural gift for those who yearn to hear, understand and respect the voices of the distinct birds and human beings with whom we share our lives in this remote part of the planet.

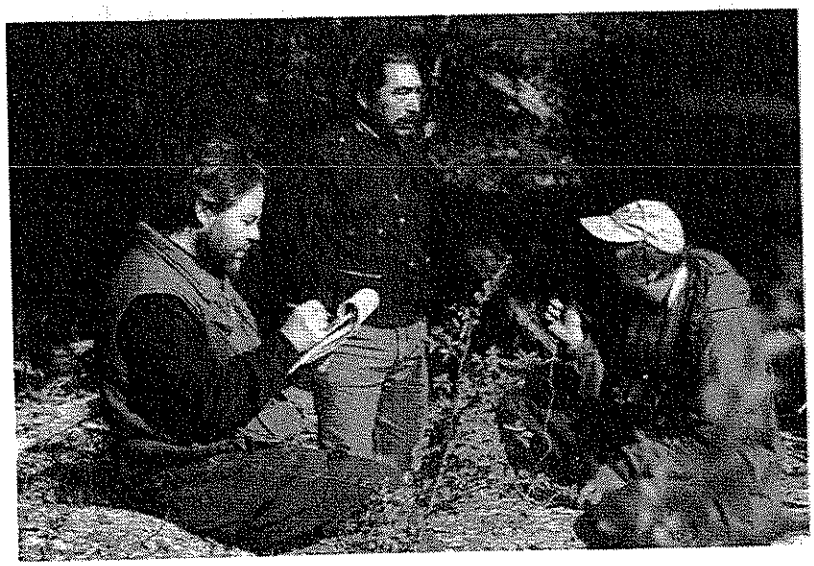
The necessity of creating this multi-ethnic bird guide about the bio-cultural diversity associated with the avifauna of the South American temperate forests arose during a workshop conducted in 1995 in the Cucao Sector of Chiloé National Park, in the territory of the Huilliche communities of Chanquín and Huentemó. The shared activities and conversations with the park rangers and ornithologists of southern Chile and Argentina expressed not only how rich the bird diversity is, but rather also the appreciations that diverse ornithologists have regarding them. I thought then that the biological diversity of the birds and

Ornithologists and park rangers from southern Chile and Argentina observe birds captured in mist nets during a workshop entitled "Recognizing the Forest Birds of Chiloé." The making of this multi-ethnic bird guide was motivated by this workshop, organized by the Senda Darwin Foundation, CONAF – Chiloé, and the Chilean Union of Ornithologists in the Cucao Sector of Chiloé National Park in December, 1995.

the cultural diversity of our observations, names and stories about them could be known and understood better by way of preparing a multi-ethnic bird guide.

The departure point was the preparation of a sound register for the bird's vocalizations, a photograph archive, natural history texts and species distribution maps, considering the birds' seasonal movements. This would permit: i) the visual and auditory identification of each species, ii) the acquaintance with their distributions, and iii) a synthesis in simple language of our natural history knowledge from field work and bibliographic accounts regarding forest birds.

At the same time, we began to conduct interviews in the field, and an extensive ethnographic bibliography review. The interviews initiated in the Chanquín and Huentemó communities in 1995 included later Manao, Linao and Compu on Chiloé Island, Galletué and Icalma in Alto Bío-Bío and Nahueltoro in Ñuble. The conversations during this slightly erratic itinerary took us to the Mapuche poet Lorenzo Aillapan, an *Üniimche* or Mapuche Birdman. It was working with the Master Aillapan that permitted us later to give a more comprehensive understanding to the interviews and intensive Mapuche ethno-ornithological bibliography review.



Mapuche poet Lorenzo Aillapan (center), recording Mapuche bird stories in the forests of the Omora Ethnobotanical Park, Isla Navarino, with Steven McGehee (right) and Ricardo Rozzi (left).

The course of searching for understanding how birds and forest ecosystems of southern South America are perceived by distinct cultures lead me to develop a doctoral dissertation in ecology, combined with a Master´s in philosophy, which would include as well the study of Yahgan traditional ecological knowledge. As part of this larger project, we invited a team of scientists, sound engineers and teachers, both Chilean and international, with whom we traveled to Isla Navarino, Cape Horn County, in January 2000.

The Yahgan grandmother Úrsula Calderón during a recording session with Ricardo Rozzi in Bahía Mejillones, Isla Navarino.

Living together with the Indigenous Yahgan Community of Bahía Mejillones and encountering with the wisdom of the Yahgan grandmothers Úrsula Calderón and Cristina Calderón, permitted us to come closer to traditional Yahgan ornithological knowledge. During the first year of work on Isla Navarino, the memories of the grandmothers Úrsula and Cristina, concerning the Yahgan bird names and narratives, initially were flowering rapidly and then later more gradually. I will never forget the moment when we had given the project up as finished and put away the recording equipment, when Grandmother Úrsula knocked on the door saying, "I remembered: *wichoa*, that is the Yahgan name of the red-breasted one." That was the last name registered in this guide book.

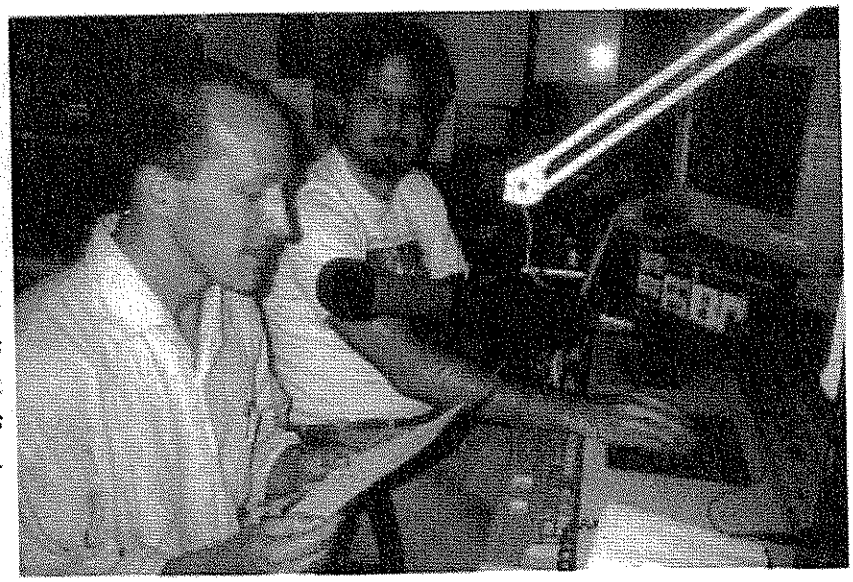
In the CD recordings that accompany this book only the names of the birds that were remembered by the grandmothers Úrsula and Cristina are recorded. Other Yahgan names appear written at the beginning of the texts for each species. With respect to the narratives, we adopted a different approach. After recording all of the stories that were remembered by the grandmothers, we decided together with teacher Luis Gómez (grandson of Grandmother Cristina) "to retell" to Úrsula and Cristina four Yahgan birds stories that possess a great educational value. These stories about the Magellanic Woodpecker, Andean Tapaculo, Buff-Necked Ibis and Greenback Firecrown Hummingbird had been told by their father Juan Calderón and other members of the Yahgan community to anthropologist Martin Gusinde between 1920 and 1923. Such "intervention" had as its objective the stimulation of their memories and to compose this guide book as educational material that would contribute to the continuity of the

The recordings of the bird names and narratives in Yahgan, Mapudungun, Spanish and English were done in the forests of the Yahgan territory of Mejillones Bay and in the Omora Ethnobotanical Park, Navarino Island, between January 2000 and May 2001. In the photograph (from left to right), ethnobiologist Francisca Massardo, Yahgan Grandmother Úrsula Calderón, ornithologist Steven McGehee, Mapuche poet Lorenzo Aillapan, Yahgan Grandmother Cristina Calderón, and teacher Luis Gómez (grandson of Grandmother Cristina) in Mejillones Bay, February 2001.

Yahgan language and traditional ecological knowledge. In the case of the stories of the ibis, or *lejuwa*, and the woodpecker, or *lana*, the grandmothers recuperated a more or less living memory. In the case of the hummingbird, or *omora*, they only recalled the name of *omora* as was told by Grandmother Julia. For the story of the tapaculo, or *tuto*, they did not evoke any remembrance, and this story was recorded by Luis Gómez with his grandmother Cristina based on the text registered by Martin Gusinde.

The first phase of work making the audio recordings culminated in February 2001, when the Mapuche poet Lorenzo Aillapan accepted our invitation to come to Isla Navarino. During the summer, with the Grandmothers Ursula and Cristina, Lorenzo, and the whole team, we recorded the names and stories of the birds in Yahgan, Mapudungun, Spanish and English, seated around the fire or under the canopy of the austral forests.

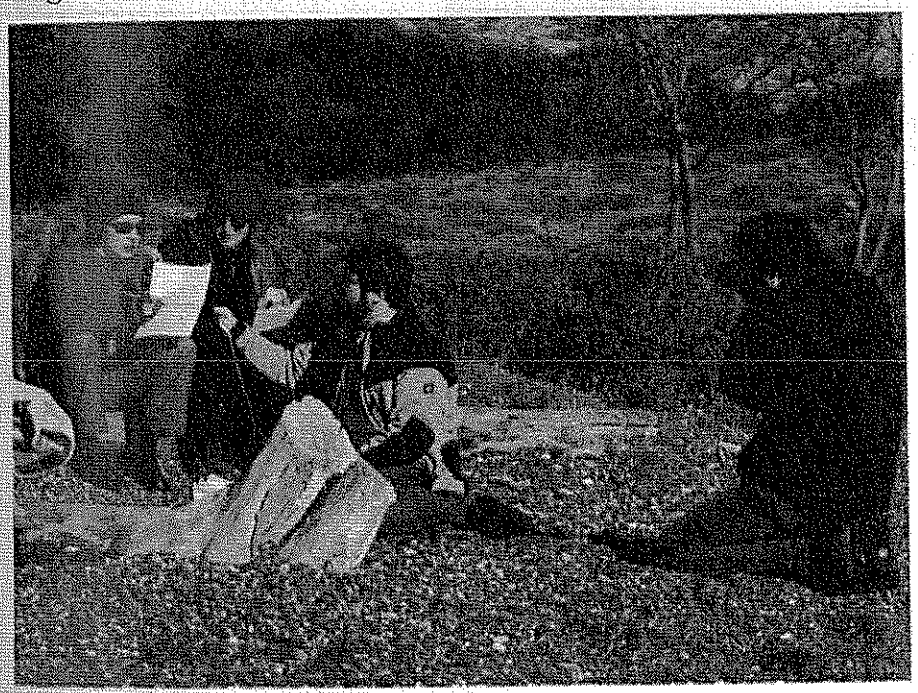
Ecologist Christopher Anderson prepared the English version of the Mapuche stories, working directly with the poet Lorenzo Aillapan and of the Yahgan stories with the



Writer Kurt Heidinger (left) and sound engineer John Schwenk (right) record and edit the sound files in the studios of WHUS Radio (University of Connecticut, USA) in order to generate the counterpoint between the diverse languages of birds and humans in the English version of the CDs in this guide book.

ethnobiologist Francisca Massardo. Christopher's texts were then edited by writer Kurt Heidinger, who also recorded many of the stories in English. Other stories and names in English were recorded by Steven McGehee, Uta Giesen and Lorena Peñaranda, which allowed the incorporation of variations in tone and pronunciation in this language, which acquired importance at the austral extreme of the Americas with the arrival of the Anglican missionaries 150 years ago.

The Spanish version of the Mapuche stories was recorded by the poet Aillapan with their onomatopoeic imitations. The Yahgan stories were recorded in Spanish first by the grandmothers Úrsula and Cristina Calderón. However, in April 2001 poet and writer Cristina Zárraga, who is the granddaughter of Grandmother Cristina, arrived to Isla Navarino. Cristina Zárraga agreed to collaborate and revise, together with her grandmother, the Spanish texts of the Yahgan narratives. Then, the



Writer Cristina Zárraga (left) and researcher Uta Giesen (center-left) record Yahgan stories with Ricardo Rozzi (center-right) in Spanish and English, while photographer Oliver Vogel (right) chronicles the scene on the north coast of Isla Navarino.

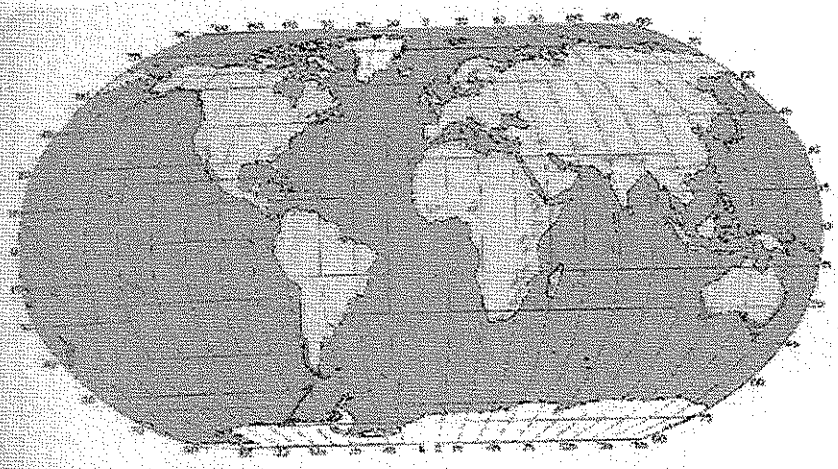
majority of the Yahgan stories were recorded in Spanish in her voice.

The meeting with Cristina Zárraga gave origin to a fertile relationship that is expressed in her own work as a writer and educator, as well as an investigator of Yahgan culture, which is continued to this day. With the poet Aillapan, the meeting also has permitted the continuation of joint work about the avifauna. Other fruit of this shared work was publishing the CDs and book *Twenty Winged Poems of the Native Forests of Chile*, which combined the poems of Lorenzo with the recordings of songs and illustrations prepared by a team of ornithologists. Today these poems continue their linguistic drift in the composition of twenty musical pieces by Andrés Alcalde and other Chilean composers. As such, following the oral tradition of the Yahgan and Mapudungun languages, this guide book has been a dynamic process that has given rise to new outlooks and songs in the dialogue with birds at the tip of South America.

Nolberto González, music teacher in Puerto Williams and director of Button Records, and Ricardo Rozzi edit the sound files of birds and human voices. The bird recordings were done by Nolberto González, Steven McGehee and Ricardo Rozzi on Navarino Island between January 2000 and March 2001. For the bird species that are found only in the more northern forests, Guillermo Egli's sound archives were used.

II. The Biocultural Mosaic of the Austral South American Temperate Forests

In order to facilitate the understanding of the relationship between birds, cultures and types of forested habitats, here we present a brief synthesis regarding the mosaic of forest ecosystems and cultures in southern South America. The ethnographic and forest-type maps will serve as a reference when viewing the distribution maps that appear together with each bird species. Combining these maps it is possible to deduce in what types of forests and in which Mapuche, Yahgan or other indigenous territories each bird inhabits.

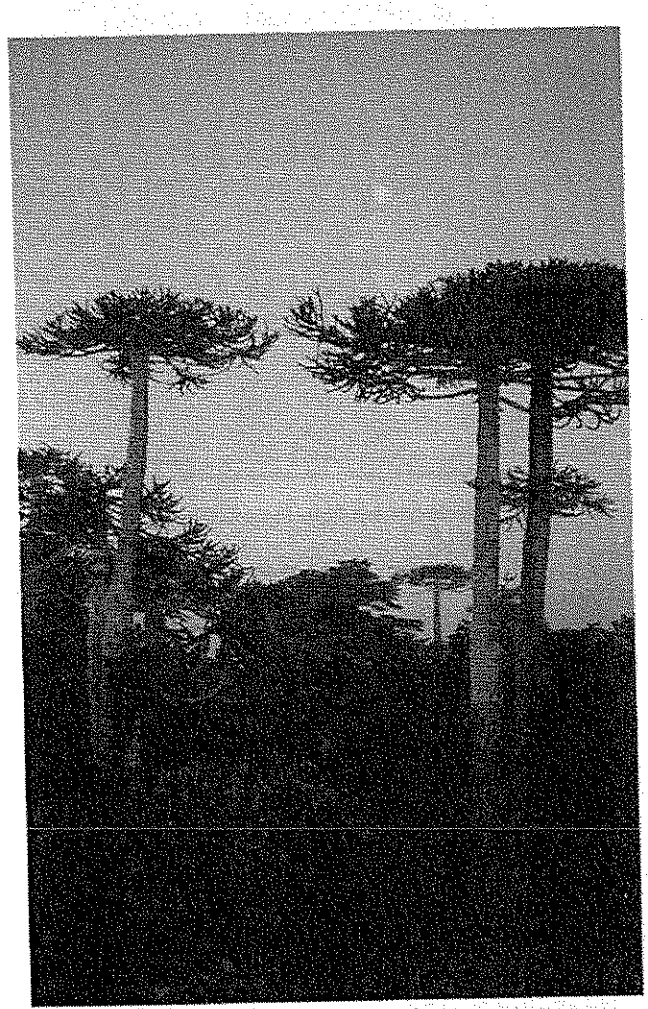


World map that illustrates the distribution of the world's temperate forests (in green). In contrast to tropical forests, the temperate forests are found at high latitudes; and, those of South America are the world's southernmost forested ecosystems (red arrow). (Figure modified from Fuentes 1994).

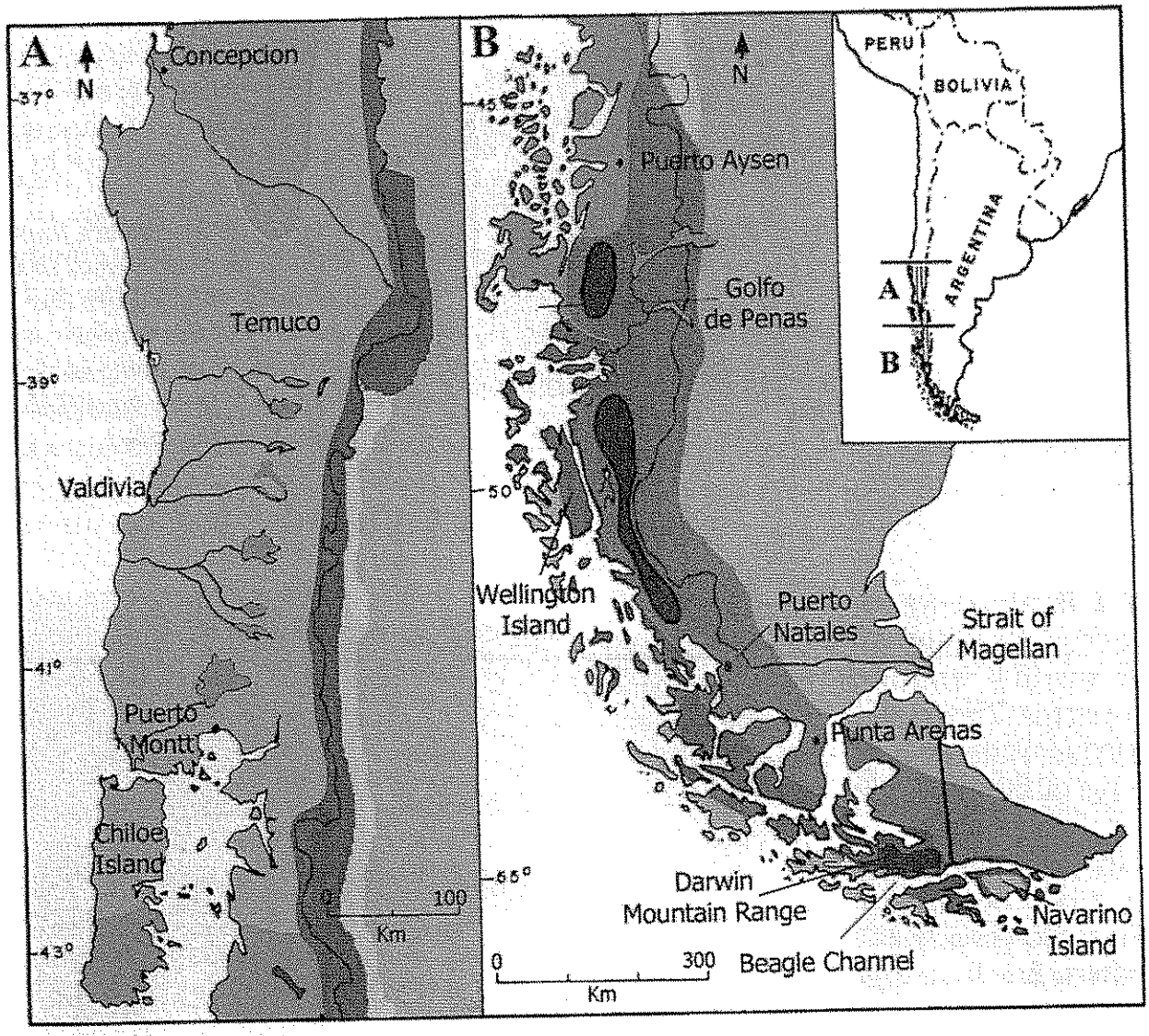
II.1 Biological diversity

The temperate forests of South America are the world's southernmost forested ecosystems. They extend for approximately 2000 km from central Chile (~35°S) until the tip of the continent (56°S), and for a short distance along the eastern slope of the Andes Mountain Range in Argentina. In this guide book we have omitted the temperate forests of the highlands in southern Brazil. In order to make it clear that we are focused on the long and narrow strip of temperate forests from southern Chile and Argentina, we entitled this book the "Multi-ethnic Bird Guide of the Austral Temperate Forests of South America."

The fauna and flora of the southern South American temperate forests possess an interesting mix of biogeographic origins, which include two divergent biotas: the Neotropical (warm) and the Gondwanic (sub-Antarctic, cool temperate). In addition, along the length of the extensive latitudinal strip of forests marked temperature and rainfall variations occur. A complex topography, which includes the Coastal Mountain Range, the Central



Forests dominated by Monkey Puzzle trees or pehuen (Araucaria araucana) *in the area of Alto Bío-Bío (38° S).*



Mediterranean *Nothofagus* forests

Evergreen Valdivian rainforest

Deciduous *Nothofagus* forests

Andean *Araucaria* forests

Xeric Cypress forests

Northern Patagonian rainforest

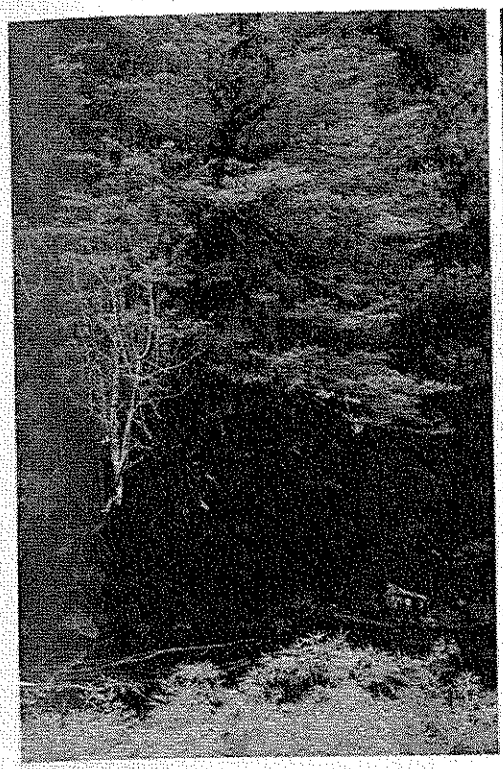
Magellanic subantarctic (or supolar) rainforest

Subantarctic moorland

Patagonian Steppe

Icefields

Main forest types in the region of the temperate forests in southern South America. The number and name of forest types vary with different classification systems, but there is no doubt about their marked diversity in the region .



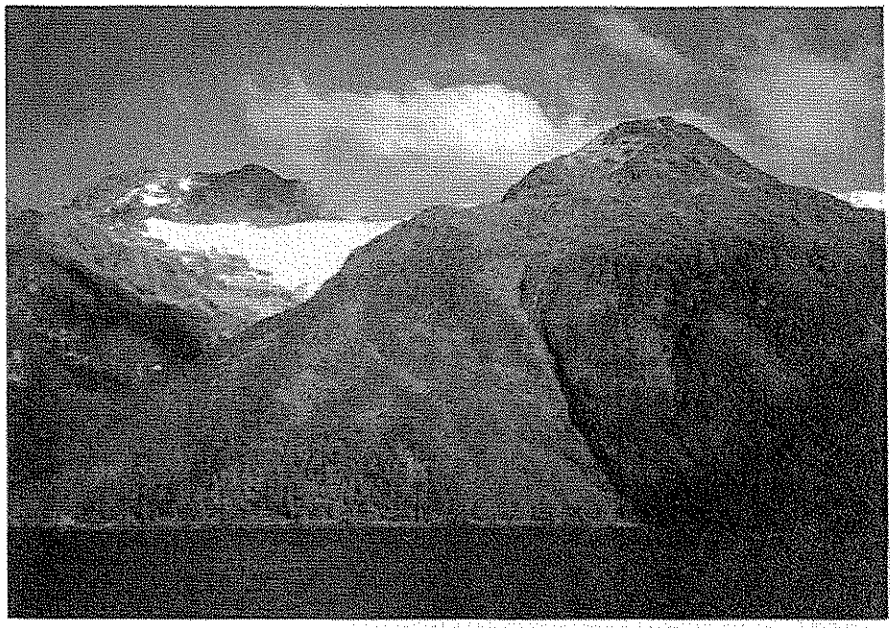
Evergreen rainforests of the Valdivian ecoregion, with a complex canopy structure (left) and understory (above). Photographs taken in the Alerce Andino National Park (41.5°S).

Valley, the Andes, and the southern Archipelago zone generates further environmental heterogeneity. The combined effect of climatic, topographic and biogeographic variations results in a remarkably diverse mosaic of forest ecosystems along the length of the latitudinal gradient.

The forest type mosaic includes landscapes as diverse as the high Andean zones, dominated by the *pehuen* or the Monkey Puzzle Tree (*Araucaria araucana)*, the dense and structurally complex Valdivian rainforests, the Andean-Patagonian deciduous forests, and the sub-Antarctic (or subpolar) Magellanic rainforests.

Another determining characteristic of the southern forests' biological diversity is their biogeographical isolation, compared to other forest biomes.

Deciduous forests dominated by Tall Deciduous Beech (Nothofagus pumilio*) at the southern of its distributional range. Photograph taken in the Omora Ethnobotanical Park, Navarino Island (55°S).*



Sub-Antarctic forests on Isla Hoste, Cape Horn County. Low-lying areas are dominated by evergreen forests of Evergreen Beech (Nothofagus betuloides). *In contrast, in higher zones deciduous forests dominated by Low Beech* (Nothofagus antarctica) *prevail. The latter are characterized by their bright red colors in autumn.*

Close-up of the evergreen forests dominated by the Evergreen Beech (N. betuloides), *which grow all the way to the high tide line along the coasts of fjords, channels and island landscapes that typify the Yahgan territory.*

Great orographic and climatic barriers separate the southern temperate forest biome from the nearest tropical forests, by at least 1500 km. To the north lies the Atacama Desert, one of the driest in the world. Westward and southward we find the Pacific Ocean. To the east, rise the high Andean Mountains and beyond them lies the vast, dry Patagonian steppe and other xeric plant communities in Argentina. In this way, the austral temperate forests of South America really are a biogeographic island. This insular character has promoted the evolution of a largely endemic biota. Close to 90% of the woody plant species are endemic. Among vertebrates, levels of endemism reach 80% for amphibians, 36% for reptiles, 33% for mammals and 30% for terrestrial birds. The latter percentage rises to 66%, if we consider the southern extreme of South America with the whole suite of terrestrial habitats. Hence, two-thirds of the bird species that you will be able to observe in the region only live in southern Chile and

Argentina, and half of these (that is, a third of all birds) are endemic to the forest habitats of the austral region. Such a high degree of endemism in the avifauna is much greater than levels recorded in other forested continental regions of the world; it is rather comparable to the high degrees of endemism found on oceanic islands.

II.2 Cultural diversity

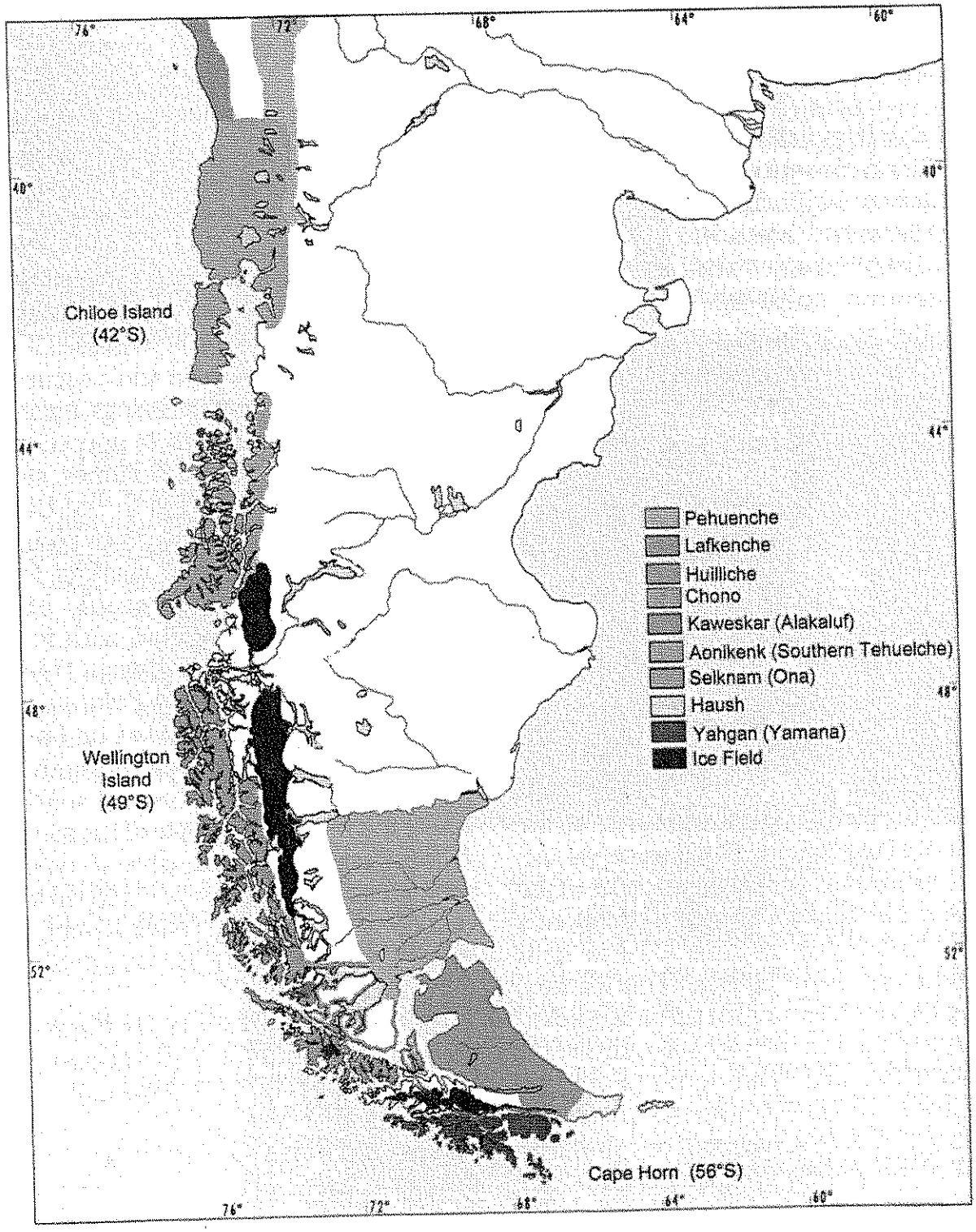
The South American temperate forest biome has supported not only unique ecosystems and biota, but also a mosaic of idiosyncratic and diversified indigenous cultures. Among these Amerindian cultures were the world´s most southerly pre-Columbian inhabitants, the Yahgans. They occupy the archipelago territory of the extreme south of the Americas (55-56°S), located from the southern coast of Tierra del Fuego to Cape Horn. The Yahgans possess a long canoeing tradition and they host a refined traditional ecological understanding of the forests in the austral archipelago and their avifauna.

North to the Yahgan territory, Tierra del Fuego was inhabited by the Selknam or Ona and by the Haush. These were terrestrial hunter groups. North of the Strait of Magellan, the Patagonian steppe, which extends to the eastern border of the Andean-Patagonian forests, corresponds to the territory of another tribe of land hunters, the Aonikenk or Tehuelches. Along the western strip of these latitudes, the rainy region of the sub-Antarctic forests from Isla Wellington (49°S) to southwest Tierra del Fuego (54°S) are the territory of the Kaweskar or Alakaluf canoe culture. These southern Amerindian peoples host unique practices and ecological knowledge, associated with their capacity to inhabit areas with very rigorous climatic conditions. Their cultural singularity is due also to the degree of isolation that they experienced with respect to contact with other dominant South American cultures, such as the pre-Incan and Incan civilizations.

The northern half of the South American temperate forest region hosts the territories of the Mapuche people (35-42°S). The name Mapuche means "People of the Earth" (*Mapu* = Earth; *che* = people). In turn, Mapuche people speak Mapudungun, which means the "Language (=*dungu*) of the Earth." This culture possesses a vital link with its environment and a capacity to communicate with other beings, including birds, as will be possible to appreciate in the texts and the recorded names, stories and their onomatopoeias in the CDs in cluded in this book. Today, three groups of Mapuche people inhabit distinct forest types: the *Pehuenche* (people of the *Pehuen*), closely associated with forests dominated by Monkey Puzzle trees or *Araucaria araucana* (=*Pehuen*); the *Lafkenche* (people of the sea or *Lafken)* associated with the coastal forests and other marine ecosystems of central southern Chile; the *Huilliche* (people of the south or *Huilli*), associated with diverse types of evergreen rainforests in the Valdivian forest ecoregion between the Toltén River (38°S) and the south of Chiloé Island (42°S).

Today, cultural diversity requires even greater consideration and support than biological diversity. Half of the indigenous languages that were spoken in Chile are extinct, and a third of the extant ones are seriously threatened. At the world-wide level, it is also considered that the threats to linguistic and cultural diversity are even

greater than those suffered by biological diversity. Indeed, 90% of the languages spoken today in the world could cease to exist during the 21st century! In this context, this multi-ethnic book aspires to contribute to the continuity of the Yahgan and Mapudungun languages, as much as to the conservation of the bird songs and their ecological interactions with the temperate forests in southern South America.



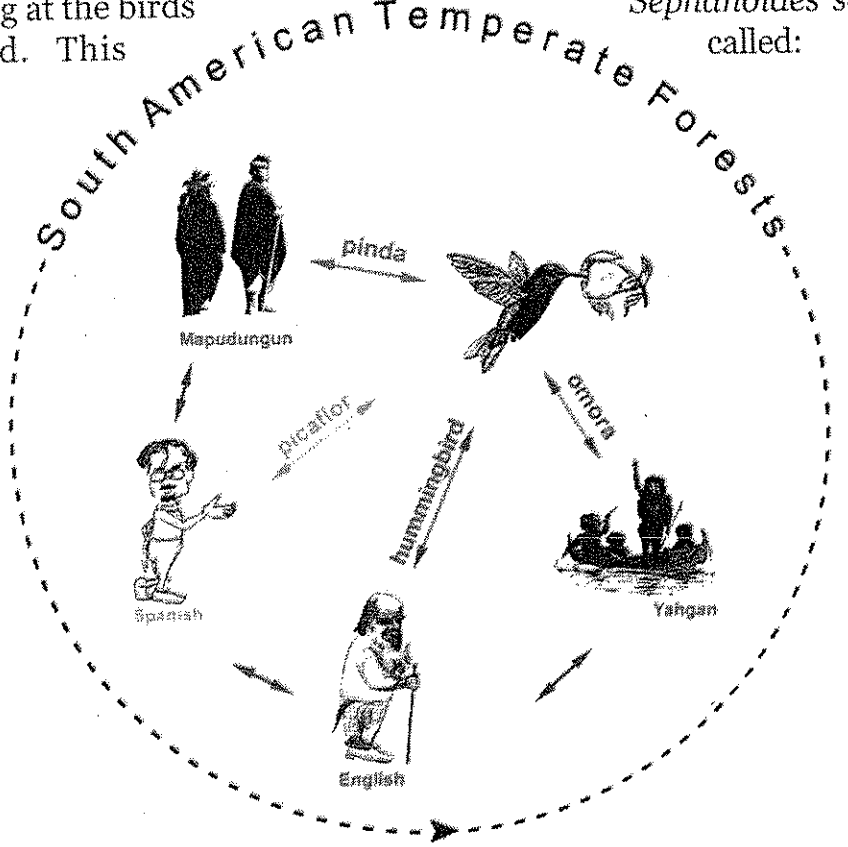
Ethnographic map of the temperate forest region of southern South America.

III. Ethno-ornithological Philosophy and Environmental Ethics

This guide is an invitation to wander through the forests of southern South America and listen to the voices of the birds and people that inhabit them. It provides an orientation in order to perceive the uniqueness of the ornithological voices or expressions that emanate from each ravine, bay or slope in the world's southernmost forests.

Each time that we observe a bird, our perception is informed by something of the bird, and something of ourselves—our senses, instruments and concepts. In this way, a dialogue arises between the birds themselves and the names and stories that express our human perceptions of them. The variety of birds is as great as the richness of the ornithological narratives with their particular ways of looking at the birds and the world. This book guides us to recognize the cultural and biological diversities, and to understand the relationships between both diversities in the Mapuche, Yahgan and scientific stories.

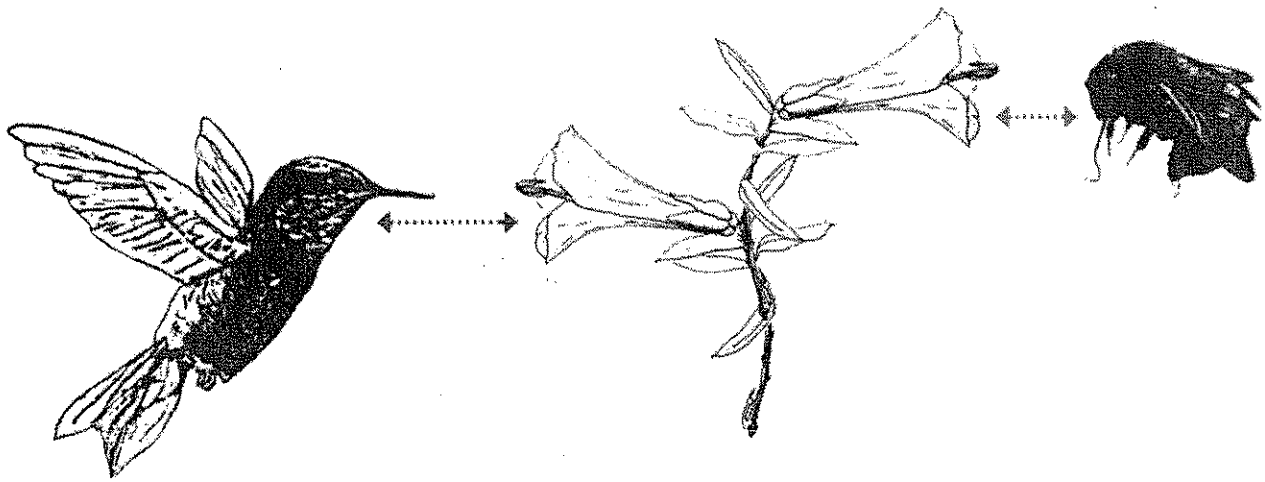
Yahgan and Mapudungun are languages with an oral tradition, and within the forests it is more common to hear than to see birds. Therefore, sensitive listening helps to cultivate our intelligence in the recognition of birds, their names and stories. For this reason, we suggest beginning by listening to the recordings of the CDs that accompany this guidebook. Familiarize yourself with the birdcalls and their names in Yahgan, Mapudungun, Spanish and English. Each name, each sound, has a story; you will hear, for example, that the species *Sephanoides sephaniodes* is called:



Upon familiarizing yourself with the audio and recognizing the calls and names of the birds, you will be able to discover how the names and stories show us complementary facets about the birds, cultures, forested ecosystems and their interactions in the austral extreme of the American Continent. For example, for the species Sephanoides sephaniodes the names in Mapudungun and English allude to the rapid, beating sound of the wings. Pinda or pigda refers to the sound that is produced when one things is rubbed against another (=pigudcun). In English this particular sound produced by the beating of the wings of this bird is called humming, thus the name hummingbird. The names in Spanish and Yahgan allude, in contrast, to the behavioral aspects that can be observed in this bird. Picaflor denotes the habit of visiting or "piercing" (picar) the flowers to drink their nectar. The valiant character possessed by omora, the tiny warrior in the Yahgan narratives, could be related to its territorial behavior of defending the flowers that it visits in order to feed itself.

In the face of the diversity of names and stories about each bird species, a question arises: How can there exist so many narratives about the same bird? Are they all false or all true? Are some truer than others? In order to respond to these questions, this multi-ethnic guide book helps to interpret the traditional stories from the viewpoint of ecology, including the natural history and life history of the birds, as well as evolutionary and human ecology.

As a point of departure in the ecological outlook for listening and reading the ethno-ornithological stories, we propose the following analogy:



In the temperate forests of southern South America, the hummingbird (Sephanoides sephaniodes) *and the bumblebee* (Bombus dahlbomii) *visit the flowers of the kolkopiw vine* (Philesia magellanica). *The hummingbird and the bumblebee take the nectar of this flower, obtaining the sugar and water that permit them to survive. On the other hand, upon visiting the flowers, the hummingbird and bumblebee help the reproduction of this plant by transporting pollen from flower to flower. In this way, more flowers*

will be produced and the cycle of life continues. This scene can be observed in the native forests of southern Chile and Argentina—and it appears "natural." It would not occur to us that the bumblebee should teach the hummingbird to visit the kolkopiw flowers in the way of an insect—or vice-versa: the hummingbird should teach the bumble bee to visit the flowers in the way of a bird. Each species visits the flowers in its own manner and both survive in the austral ecosystems.

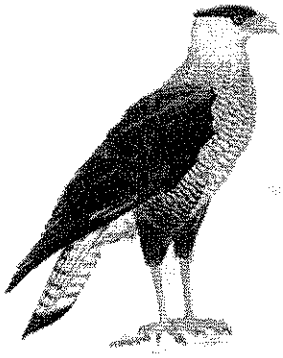
In an analogous way, we can interpret the diversity of Yahgan, Mapuche and Western-scientific viewpoints about birds. Each of these cultures, and languages, recognizes the bird species and interacts with them in a particular way. As has occurred with the hummingbird and bumblebee, the Mapuche and Yahgan cultures have inhabited and survived in the austral forests for thousands of years. As a result, the traditional ecological knowledge (including the recognition of the birds and their relationship with the biological communities and ecosystems) has been appropriate to permit the survival of these people. As a result, their stories are not merely "myths" or "legends," but rather they interpret the natural reality in an effective manner.

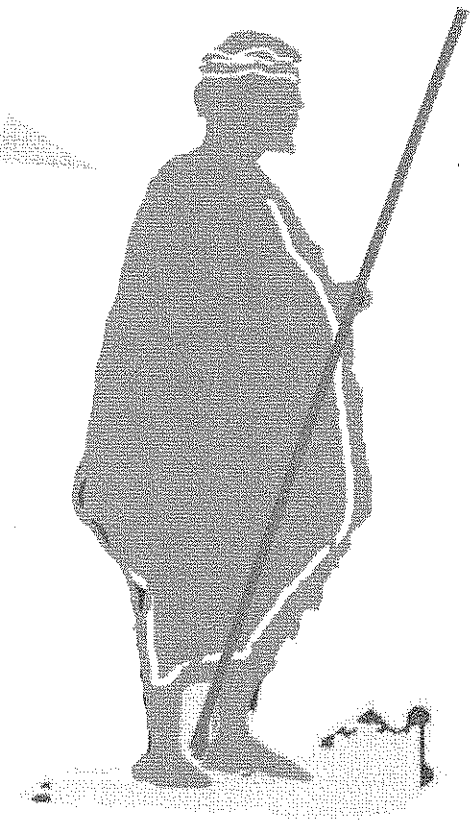
The traditional ecological knowledge contained in the Yahgan and Mapuche ornithological narratives permits us to expand our ways of knowing about, and inhabiting, nature, and of living together with the birds and their ecosystems. This enriches our experience of visiting and exploring the austral forests of South America. At the same time, the broad array of forms of traditional ecological knowledge offer us valuable perspectives regarding the conservation of these ecosystems and approaches to inhabiting them in a sustainable manner.

The Mapuche and Yahgan ornithological stories not only contrast scientific views; we also find substantial similarities between them. For example, the indigenous narratives share two central notions with the contemporary, ecological-evolutionary perspective: 1) the sense of kinship between human beings and birds, derived from common genealogies or evolutionary histories, and 2) the sense of biotic communities or ecological networks, of which humans and birds form part.

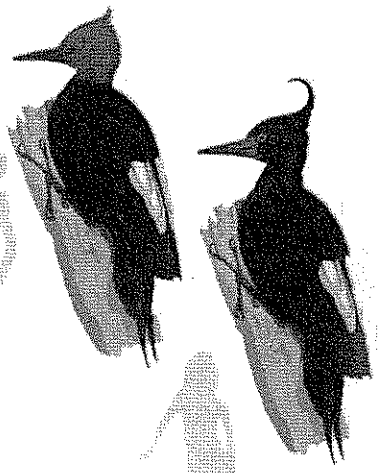
III.1 Our relatives, the birds

With respect to the evolutionary sense of kinship, modern biology has discovered that the human species (*Homo sapiens*) possesses cells, blood vessels, vertebrae and other structures that are very similar in birds. As can be observed on the cover of this book, the eyes of birds and human beings are very similar, as well. When walking through the forests, use your binoculars to discover how similar to your own eyes are to the eyes of the birds. This type of similarity would be explained evolutionarily by the existence of a common origin or ancestor for birds and mammals. Such a common ancestor would have existed millions of years ago. In the broad sense of a common evolutionary history and biological nature, these affirmations that result from a scientific analysis share essential concepts with those contained in the Mapuche and Yahgan narratives, such as the sentence "in ancestral times when birds were humans" with which several Yahgan stories begin. Let's consider the following example:

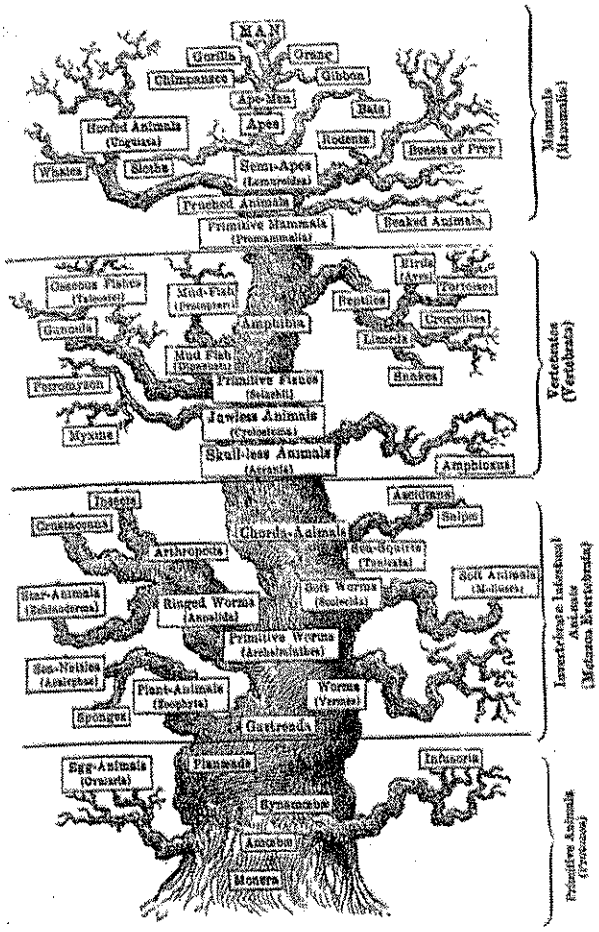




One of the Mapuche stories tells that Lautaro or Leftraru, the greatest of Mapuche warriors, descended from the lineage of eagles and caracaras or traru (Caracara plancus)*. So much so, that the name Leftraru means fast (=lef) traru.*



One of the Yahgan stories affirms that the woodpeckers, or lana, (Campephilus magellanicus) *are descendants of a pair of Yahgan siblings.*



The tree of life by German biologist Ernst Haeckel illustrates the scientific-evolutionary theory of Charles Darwin, which proposes that human beings possess a common evolutionary origin shared with all living beings.

The genealogies of birds and humans illustrated in the former example allude to an evolutionary history that implies a common nature for bird species and the human species. From the point of view of contemporary environmental ethics, the three cultural perspectives—Mapuche, Yahgan and scientific— emphasize the *intrinsic value* of avifauna because *the birds are our distant evolutionary relatives*. This implies that, to some degree, the existence of birds can be subject to moral considerations based on ontological and ethical judgments on par with those we use to judge the value of human life.

III.2 Ecological and ethical networks

Regarding the concept of ecological networks, the participation of the human species in food webs and other biotic interactions is evident today for contemporary science. Human beings are not separate from nature; we constitute a keystone species for many ecosystems. We influence ecosystem processes, at the same time that ecosystems provide us with goods (such as medicinal plants, fishes and other food) and services (such as clean air, the regulation of climate and hydrologic cycles, increasing soil fertility, and the control of pests). The new discipline of ecological economics has determined, for example, that the cheapest and most sustainable method to assure the supply of drinking water is the protection of forested watersheds. Concepts such as these, which are recent for science, are rooted in the Mapuche and Yahgan traditional ecological knowledge.

Yahgan stories —such as that of the Andean Tapaculo or *tuto* (*Scytalopus magellanicus*), which like the ancient Yahgans constructed canoes of bark and fibers— and Mapuche narratives —such as that of the Meadowlark or *lloyka* (*Sturnella loyca*), which like the shaman or *machi* obtains its medicines from the forest plants— illustrate how profound are the notions of belonging to ecosystems and the identification of humans with birds. Moreover, the Yahgan and Mapuche narratives teach us about practices and values that impel this notion of pertaining to biotic communities.

The Yahgan story of the hummingbird, or *omora*, (*Sephanoides sephaniodes*), for

example, has a clear ethical message. Food and water should be shared between all members of human and biotic communities, and with his act *omora* brings social as ecological well-being. This *omora* story shows how the Yahgan-bird community achieved the provision of drinking water, and teaches us that social well-being and conservation of biological species go hand in hand; that solidarity in the end is better than selfishness, and leads us toward a better life for all. This is especially true in the extreme south.

The perspective of conservation of bird and human communities in the Yahgan story of *omora* is comparable to current ecological statements. Modern sciences propose that birds and other species contribute to ecological processes, such as pollination, the dispersal of seeds, the control of insect populations, preying upon rodents and the cycling of nutrients with their guano and the mineral salts that birds transport from ocean to mountain ecosystems in the austral fjords. At the same time, the maintenance of these ecosystem processes contributes to the conservation of the flora in watersheds. This vegetation is crucial for the regulation of hydrologic flows, because it contributes as much to preventing floods as droughts. In this way, the Yahgan narrative of *omora*, as well as the scientific ecosystem analysis, recommends the protection of biodiversity of the watershed in order to secure the equitable and sustained provisioning of drinking water.

From the perspective of contemporary environmental ethics, the imperative implicit in the Yahgan narrative and the scientific analysis is to conserve the bird community in order to assure reliable water and, in this way, to respect the natural right to life of the diverse birds, human beings and other living beings. This imperative emphasizes the notion of *instrumental value*, because the conservation of biodiversity is an *instrument* for the survival of humans and the assemblage of other species.

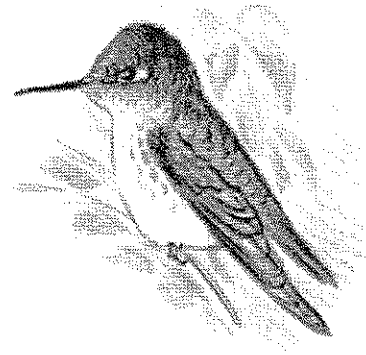
The notions of *intrinsic* and *instrumental value* of the life of birds, humans and other living beings that co-inhabit the region of the temperate forests of South America, derive as much from current scientific analyses, as from traditional ecological knowledge. Their ethical-practical purpose is to promote the continuity, and continuance, of life.

An understanding of the diverse languages of cultures and birds, permits us to feel and look at ourselves immersed in the forests, living together with the birds and with the myriad of perceptions we humans can have of the birds. As human beings of different sexes, ages, geographies, cultures and histories, the austral forests open to us an opportunity —in the context of a globalized world— to glimpse and discover very diverse biocultural corners. This Multi-ethnic Guide is a source book of reflections about how to live together respectfully with the singular biocultural diversity that inhabits the extreme south of the Americas. At the same time, its voices and narratives can inspire respectful forms of inter-specific and inter-cultural inhabitation of the multiple urban, rural and remote corners of the planet, each one characterized by unique biocultural diversities.

IV. Songs and stories recorded in this guide

The song of each bird can vary from one moment to the next, between spring and winter, from individual to individual, between one forest and another—as occurs with the *chámuj*, *chinkol*, *chincol*, Ruffous-Collared Sparrow or *Zonotrichia capensis*, whose trills vary between night and day and from northern to southern populations.

Like the voices of the birds, the names of and stories about birds told by the Yahgans, the Mapuches and the scientists change from moment to moment, from place to place and from person to person. For example, *omora* is more hummingbird-human in the story recorded by Grandmother Julia; in contrast, it is more human-hummingbird in the narrative told by Grandmother Rosa, but always *omora* is small and courageous. So, we find variations and similarities among stories, even within the narrations of a given story. The accounts of this guidebook constitute only a moment in the scientific, Yahgan and Mapuche ornithological record. The search remains endlessly open.



In this guidebook we find particular records of birdcalls and stories that present many variations through the geography and history of southern South America. Let us get to know, then, something about those who tell the particular Yahgan and Mapuche narratives recorded in the CDs of this guidebook.

The voices and stories must continue

For the grandparents and grandchildren
of the birds, *pij*, *üñüm* or *aves*
and the *che*, human beings, *yaganes* or *seres humanos*
that fly (or would like to fly)
as *omora*, *pinda*, hummingbird, *picaflor* or *Sephanoides sephaniodes*,
from flower to flower in the forests of austral South America,
feeding ourselves and feeding many other living beings,
captivated by the beauty, mystery and delicacy
of the odors, tastes, colors, textures and sounds
that emanate from this inexhaustible fount of biological and cultural diversity,
flying over the indifference and the dogmatism,
determined to live the risk and vitality of sharing the life with whom we co-inhabit
these rainy and fecund *forests*, *ashuna* or *mawida* of the planet,
we must continue listening and permitting the expression of their multiple voices.