

H. LEE JONES, PH.D.



Maiuia Mannikibani
KIRITIMATI

The Birdlife of Christmas Island

WE WATCH AND WE LISTEN. YOU AND I.

Ti matakū ao ti kakaauongo, ngai ma ngkoe. A bane n

ALL OUR SENSES ARE FINE-TUNED. YOU SEE

tauraoi ma ni kaantaninga ara bwai n namakin ni kabane.

ONE THING: I. ANOTHER. BUT HOW CAN

Ko noora te bwai teuana; ngai, teuana. Ma e kangaa n reke

THAT BE? WE ARE OF ONE WORLD. THERE IS

anne? Ti teuana ara aonnaba. Ti teuana te bwai ae e tei i

ONLY ONE ACT BEFORE US. I SEE ART; YOU

matara. I noora te banna; ngkoe ko noora ti te bwai. I ongo

SEE A MERE COMMODITY. I HEAR NOISE;

te rongoaa, ngkoe ko ongo te katangitang ae tangiraoi.

YOU HEAR BEAUTIFUL MUSIC. "COME. LET

"Nakomai, N na kaotia nakoim." I tuangko, ao ngkoe ko

ME SHOW YOU." I SAY TO YOU. AND YOU TO

tuangai. A uaia ni karababaaki ara namakin.

ME. TOGETHER, WE ARE ENRICHED

MAIUIA
MANNIKIBANI
KIRITIMATI

The Birdlife of Christmas Island



H. Lee Jones, Ph.D.

I Kiribati Translations by Atanraoi Baiteke

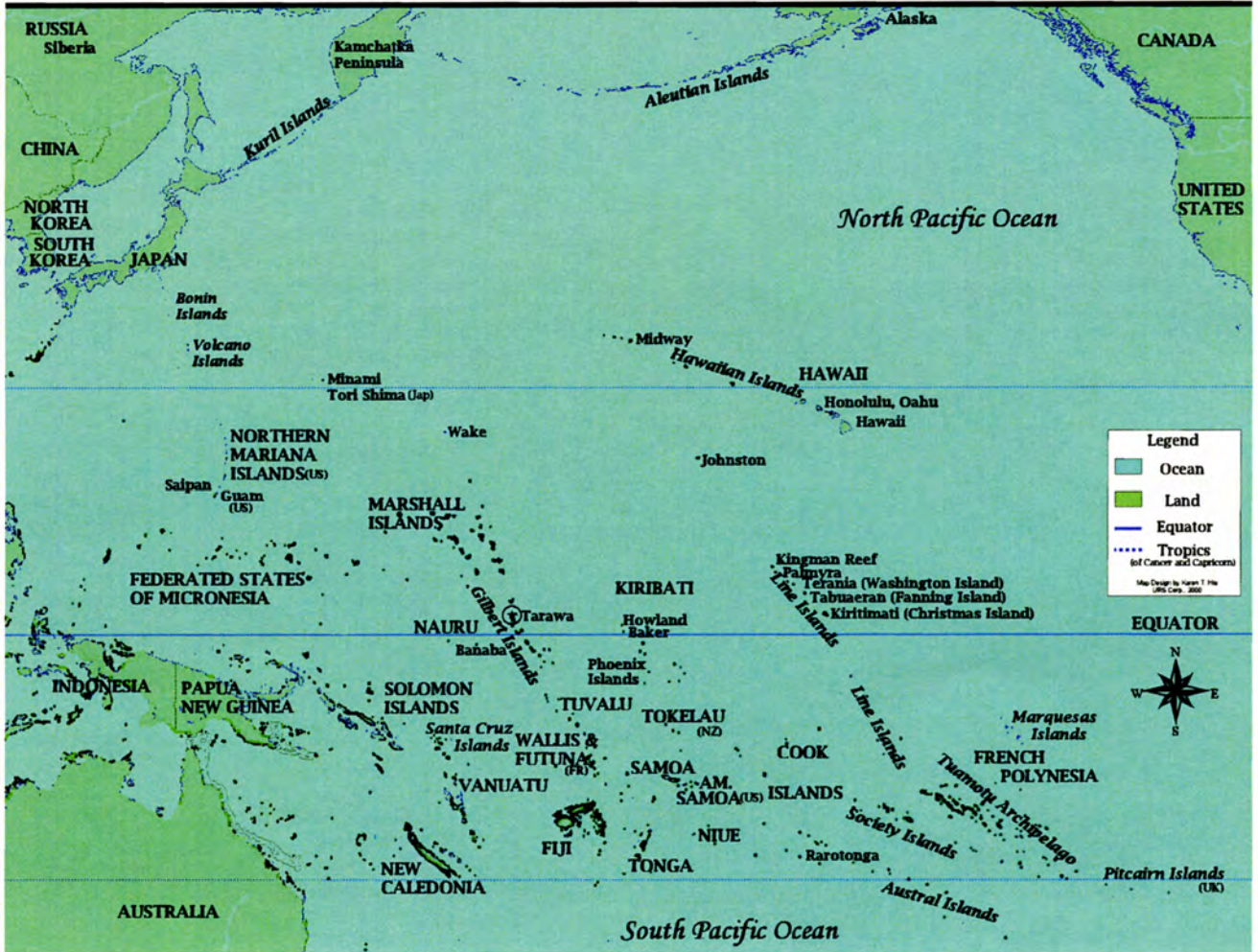
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Pacific Islands



Taeka Ni Kaaitau

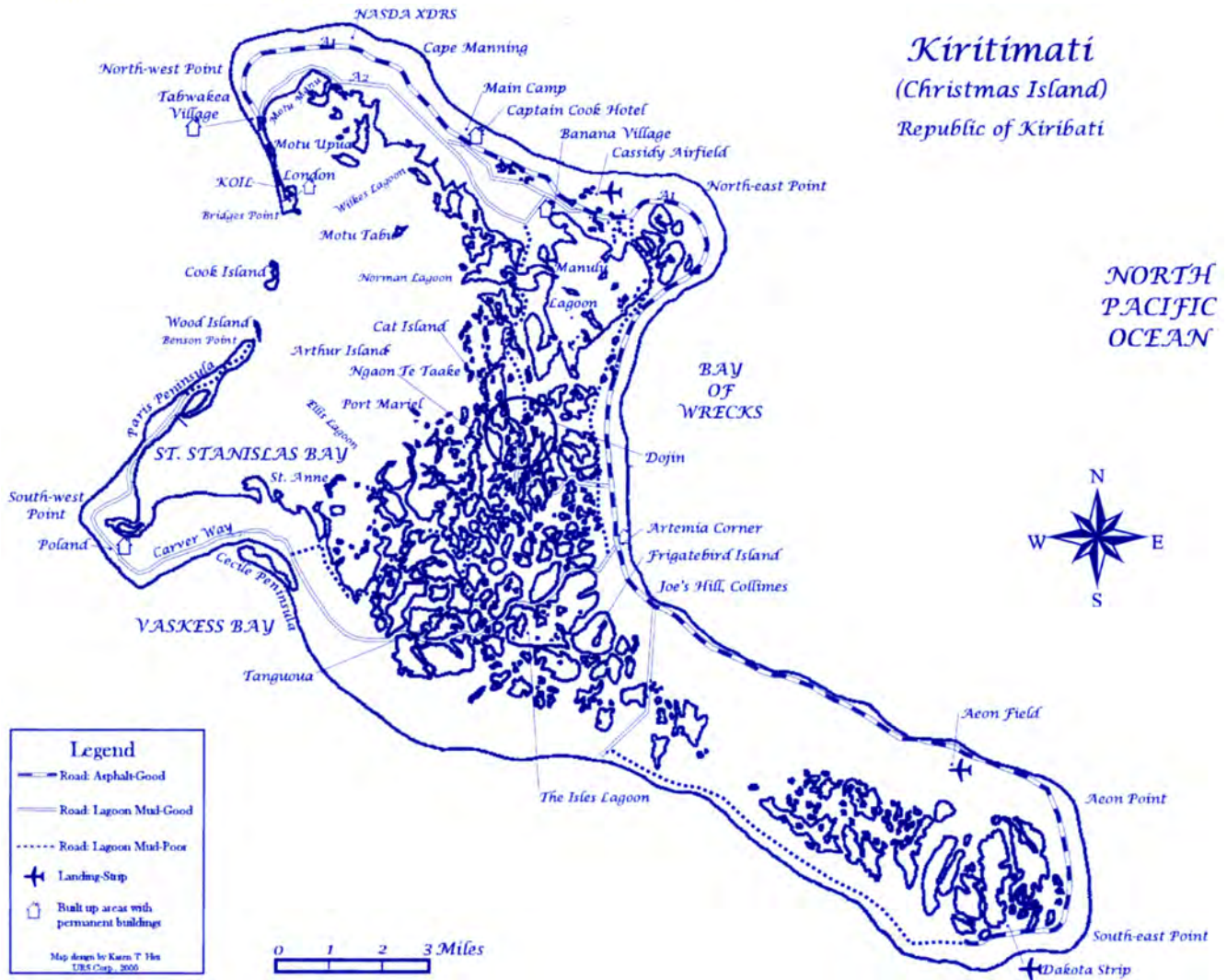
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Kiritimati

CHRISTMAS ISLAND (REPUBLIC OF KIRIBATI)



Moantaeka

INTRODUCTION

Kiritimati boni ngaia te kabanea ni bubura mai ibuakon abamwakoron te Ribaberiki ni Kiribati ae 33 mwaitiia, ake a tibwatibwaaki nakon tenua taian aono. Te aono mai maeao, 17 abamwakorona ao e aranaki bwa te aono ni Rawaki, ao Tarawa, boni ngaia te atunnaba n te aono aio. Te aono are i nuka, e aranaki bwa te aono ni Binikiti ao mwaitin abamwakorona boni wanua ao akea kaiia. Mai mainiku, e aranaki ngkanne bwa te aono n Raina ao mwaitin abamwakorona wanua naba, ao Kiritimati boni ngaia te kabanea ni bubura n abamwakoro n te aono aio. Ngkana a bootaki aban nako Kiribati, ao buburan abana ni kabane ni bootaki, e nakon te bubura ae 820 km te tikuea. Ma e ngae ngke ti buburan abana aio, ngkana e bootaki ma buburan ana marawa, ao e nakon te bubura ae 3.55 te mirion km te tikuea are e a rabuna te marawa ae 3,000 km mai mainiku nako maeao ao 2,100 km ni marawa mai meang nako maiaki. Nneni ngkanne Kiribati, e a boni mena i nuukan raoi te Betebeke ao e tei n okoro ma aaba ake nikirana iaan ae ti ngaia te aba n te aonnaba ae e roota mainikun ao maeaoon te rain are e babaairea bongin te aonnaba, (International Date Line) ao e a bon roota naba meangin ao maiakin te Ekuetoa.

Ni karokoa taai aika a tibwa nako, Kiritimati ngaia te aba ae moan te tiraua iai aekan nako mannikiban taari, nakon aba nako ake a kabuebue ao tao bon iaon naba te aonnaba. E kuri n akea riki te tabo n te aonnaba ae e kona n orei nako mwaitiia mannikiban taari iaoni Kiritimati ake 25 te mirion mwaitiia ae bootaia tenaan utu ni manniki-ba ae 18 aekaa, ao ake a rangi ni kakamataku. Ngkekei, mai ibuakon te mwaiti aio, 95 te katebubua mai ibuakoia, tenaani keeu, tao 4 te katebubua, tenaan tangiuoua ao 1 te katebubua e a tibwatibwaaki ibuakoia utu ake nikiran ake 16 aekaa. Ma ngkai, ao e a bitaki anne. Ngkai, mwaitiia tenaani keeu, ai bon ti 3 nakon 5 te mirion, ao e a keekeerikaaki mwaitiia. Aekani mannikiba riki tabeua n ai aron te mouakena, a boni keekeerikaaki naba mwaitiia. Ao ibukin tera? N iterana teuana, ao boni mwiin te aki iango raoi ao te kanabuaka irouia aomata, ao n iterana are teuana, mai imwiia katamwa ao kimoa. Aomata ake a bon tibwa roko ngkai naba n te aba ni kawai aio, ao ibukin aia waaki n aki iango bwa tera ae e na riki imwiin aia mwakuri n taai aika a na roko, ao a boni kakioi nako mannikiba aika keeu ao mannikiba ake nikiraia. Ao tera mwiina? A nakea mannikiba aikai, ao a na manga oki ke a na aki? A na kaekaaki titiraki aikai inanoni iteraniba aika imwiina.

Tikiraoin ao kakamatakuni Kiritimati, ngaia teuana mai ibuakon ana bwai ni karaba te aonnaba. Ma bon ti 3 te awa kaeana n te wanikiba mai Honolulu. E a tia ni kuneaki Kiritimati irouia taan akawa ake ngaia mwaitiia taan neweaba iaona, n aia ware ae e nakon 90 te katebubua mai ibuakoia taan neweaba. Ma n taraan te ware ae 40 te mirion irouia taani matakun irouia mannikiba n te aonnaba, (man taiani kakaee, ao e a oti bwa a tiraua riki taani matakukiniia mannikiba nakoia taan akawa!) ao rongorongoia mannikibani Kiritimati, e nang aki tiku n arona are e aki ataaki, ma e nangi tanoata ngkai n te aonnaba. Angiini mannikiban te aba aio, a rangi ni kai roko aomata irarikiia, ai ngaia are e rangi ni kai reke rawean tamneia ni kaan. A ewa mai ibuakoia mannikiba aikai aika a rangi ni kakamataku aroia ni kakarekenano. Tabeman mai ibuakoia a bon aki kona n nooraki n taabo tabeua n te

Christmas (Kiritimati) Island is the largest of 33 islands in three widely scattered archipelagos that together comprise the Republic of Kiribati. In the west is the 17-island Gilbert group, one of which, Tarawa, is the country's capital. In the central portion of the Republic is the virtually uninhabited 8-island Phoenix group, and in the east is another 8-island group, the Line Islands, of which Christmas Island is the largest. Although the combined land mass of all 33 islands is only 820 km², the country, including its territorial waters, comprises 3.55 million km², reaching across 3,000 km of ocean from east to west and 2,100 km of ocean from north to south. With its location squarely in the Central Pacific, Kiribati has the distinction of being the only country in the world that lies both east and west of the International Date Line and north and south of the Equator.

Until recently, Christmas Island had the largest assemblage of seabirds of any island in the tropics, perhaps in the world. Few, if any, other places on Earth could match its spectacular 25 million seabirds of eighteen species. Ninety-five percent of these were Sooty Terns, maybe 4% were Wedge-tailed Shearwaters, and the other 1% were divided among the 16 other species. All that has changed. Now there are only 3 to 5 million Sooty Terns, and their numbers continue to decline. Other species, like the Masked Booby, are also declining. Why? Short-sightedness and greed on the one hand; cats and rats on the other. The people, recent arrivals on this ancient atoll, without knowledge of the consequences and with no thought toward the future, are systematically driving the Sooty Terns and other birds away. What are the consequences? Where are the birds going, and will they ever return? These questions will be addressed in the following pages.

The beauty and excitement of Christmas Island is one of the world's best kept secrets. Yet it is only 3 hours from Honolulu by plane. Fishermen have discovered Christmas Island, and they account for 90% of its tourism. But with more than 40 million birdwatchers worldwide (recent surveys show that birdwatchers now outnumber fishermen!), Christmas Island's birds are not likely to remain a secret much longer. Most of the island's birds are easily approached, allowing close-up viewing, filming, and photography. Many have elaborate courtship rituals. Some are found virtually nowhere else in the world. In short, Christmas Island is a birdwatcher's paradise! Birders alone have the potential to double Christmas Island's tourism industry. But not if there are no birds to see!

The objectives of this book are simple – to enrich the appreciation and enjoyment of the island's remarkable birdlife among the people who live on Christmas Island; to demonstrate the impressive economic and cultural

aonnaba. Ngkana ti atongnga ni kauareerekea, ao ti a kangai naba bwa Kiritimati aia bwaretaiti taani mamataku irouia mannikiba. Matakuaikinaia mannikiba, e kona n riki bwa te anga ni kareke mwaane teuana ae e na rangi ni bubura, ni katoroa mwaitin te karekemwane ibukin te itera ni kaneweaba. Ma e aki kona n reke aio ngkana ai akea mannikiba ake a na matakuaikinaki!

E rangi ni beebete oini korean te boki aio – e na buokiia taani maeka iaoni Kiritimati bwa a na kona n noora tikiraoin ao kakamatakun mannikiban abaia ake a rangi ni kamimi; e na katereterea naba tiki-raoia mannikiba ao aanga ni karekemwane ake a na kona n reke mai iai ngkana a tararuaki raoi, ao irarikin naba anne, boutokaan taekaaia mannikiba aikai bwa ngaia naba bwaai ni kakaawaki ni kaubwaini Kiribati; ao ni katerei taini kangaanga ake a bubura n iteran te mwaane, te kaubwai ao te maiu ngkana arona bwa a aki tararuaki raoi mannikiba aikai. Te boki aio ngkanne, e aki ti katerei taiani kangaanga, ma e kaoti naba taian anga ake a kona ni kaitaraaki iai kangaanga aikai. Tabeua mai ibuakon iango aikai, a beebete karaoakiia, ao tabeua a na boni kainanoa te ibuobuoki ma te keiakinaki. Ma e ngae ngke baikara anga ni kaekai kangaanga aikai, bwa a beebete ke a aera, te moani bwai ae e kainanoaki bon aia boutoka aomata. Ngkana akea anne, ao bon akea te kangaanga ae e na konaa ni buokaki.

E aera ngkai a rangi n ewa mannikiba iaoni Kiritimati? Ngkana e na kaekaaki te titiraki anne, e na riai moba ni iai otara n okoron te aba aio. E mena Kiritimati, 2 te rikuri mai meangin te Ekuetoa n te marawa ae te Betebeke mai Mainiku-nuka, ao ngaia te kabanea ni bubura n abamwakoro iaon te aonnaba. 53 km abwakina mai tabona nako tabona ao buburana 375 km te tikuea. N te aro bwa e aonga n reke riki tamneina ae e teretere ao ngkana ko botii abamwakoroni Kiribati ake nikirana ake 32 ao e a boni kan roko naba Kiritimati ni buburaia. Te bwai riki ae moan te kakaawaki irouia mannikiba bon rawtan taian nama aika a uareereke, ke taian nei ni ikotaki ma neina are te kabanea ni bubura. Angiin taian nei aikai, iai teuana ke uoua ke a mwaiti riki taian atimwakoro ake a uareereke inanoia. Tebubua te ririki n nako, ao tao atimwakoro aika a rangi ni uareereke aikai a aki rangi ni kakaawaki ibukin kaawakinaia mannikiba. N te bong aio, ao atimwakoro aika a uareereke aikai, ai boni ngaia bukina ae a tiku n ewa iai aekan nako mannikiban taari iaoni Kiritimati. Tebubua naba te ririki n nako ao bon akea naba taani kaakang mannikiba iaon te abamwakoro aio, tao bon ti kimoani Boreneta. E aki ataaki bwa e kangaa n roko te aeka ni kimoa aio iaoni Kiritimati, ma tao e roko irabubua te ririki n nako, bwa tao e iriia taan neweaba mai Boreneta ke tao e a bon roko mai imwiia kaibuke ake a koro. Teuana ao te iterana te tienture n nako, ao akea katamwa ao aomata n te abamwakoro aio. N teina ngkekei, ao bon akea raraomaia taiani mannikiba. E koaua bwa tao boni iai taiani kaakang, n aekan te eitei ao ika ake a bubura i taari ao kimoani Boreneta ae e uareereke aio. Ma inanon te ngaa n ririki ao a boni bati katanaiia ke a katei otangaia mai irouia kaakang aika tenaan eitei ake a ioawawa, ika ao kimoa ao a bon aki bwerengaki irouia kaakang aikai. A kaman tia naba n rinanoa bibitakini buakan te ang ae te “El Nino” imwaain ae ti ataa te aeka ni bwai aio ma a boni bati naba aroia ni kataniia man te bwai aio.

A tibwa roko n tiku ni maeka aomata iaon te abamwakoro aio n 1882 imwiini iraua taiani kakatai ni maekana te tabo mai imwaina ake a bon aki bwai. E aki maan imwiin rokoia aomata ao tao a bon roko naba tenaani moani katamwa. Ke tao, a boni kaman roko riki mai imwaina ma ni kaibuke ake a kamani koro imwaain rokoia taani maeka. E aki maan imwiin rokoia, ao a kunea aomata ma katamwa bwa a rangi ni kai reke mannikiba. A rangi ni kai reke mannikiba, e aki kangaanga rekeni bunnatoia ao ti tebo ma a aki baabane. Ma mannikiba, a bon tuai man aitaria mai imwaina ma bwaai ni kamimi aika a rangi ni buabeka aikai. E a tatao riki irouia kani katanakiaia aia bunnatoi ma natiaia ao e a tatao riki te iango aio irouia nakon ae a na kitana te tabo.

benefits the island’s bird resources can have if properly managed; and to demonstrate the dire economic and social consequences if they are not. This book not only points out the problems, it offers solutions. Some are simple, others will require considerable effort. But any solution, no matter how simple, first requires the will of the people. Without that will, no problem can be solved.

Why does Christmas Island have so many birds? In order to answer that question, one must first understand the uniqueness of the island itself. Christmas Island, at 2 degrees North Latitude in the East-central Pacific Ocean, is the world’s largest atoll in terms of contiguous land-mass. It stretches 53 km from end to end and encompasses an area of 375 km². To put this in perspective, Christmas is nearly as large as all the other 32 islands of the Republic of Kiribati combined. Most importantly for the birds, Christmas is dotted with hundreds of land-locked lagoons in addition to its one main lagoon. Most of these lagoons themselves have within them one or two to several dozen small islets. A hundred years ago, these islets may not have played a very important role in preserving the island’s birdlife. Today, they are the main reason for Christmas Island’s large and diverse population of seabirds. A hundred years ago, there were no terrestrial (land-based) predators on the island, except possibly the Polynesian rat. No one knows for sure when or how the Polynesian rat reached Christmas Island, but it may have arrived hundreds of years ago, perhaps transported by Polynesian explorers, perhaps more recently from a shipwreck. A century and a half ago the island had no cats and no people. In a sense, the birds were worry-free. Sure, they had predators – other birds like the frigatebird, for example, and large fish in the sea, and perhaps the diminutive Polynesian rat. But over the millennia, they had adapted defense mechanisms to protect themselves from the marauding frigatebirds and opportunistic fish; and the rats, if present, had little effect. El Niño took its toll long before we ever knew what an El Niño was, but we now know that the birds are well adapted to withstand the devastating, but short-term effects of El Niño.

The first permanent human population was established in 1882 after several failed earlier attempts. Not long after the first humans settled on the island, it is likely that the first cats arrived. Or, perhaps, they arrived even earlier from one of the several shipwrecks that preceded the first settlement. Not long after their arrival, both humans and cats discovered that birds were a great source of food. They were easy to catch, their eggs were not hard to find, and there seemed to be an endless supply. But the birds had never before encountered these strange new life-forms with such voracious appetites. Their innate desire to defend their eggs and young far outweighed any urge to flee. But the birds nesting on the small islets were safe. Cats don’t swim, and humans, lacking the means to easily reach these islets, were content with the many birds and their eggs and young that could be found closer to their villages.

Gilbertese culture played an important role in the relationship that soon developed between the islanders and the birds. Pacific islanders, whether they be Micronesian, Melanesian, or Polynesian, long ago learned to live off the limited resources that most atolls had to offer. Marine life was abundant and, not surprisingly, became the mainstay of island life. From the sea

Ma mannikiba ake a kabwakabwaka n tenaan atimwakoro ake a uareereke, a tani mai irouia bwaai aikai. A babanga n uaua katamwa ao e kangaanga rokoia aomata n aia atimwakoro aikai bwa are akea baoia, ao irarikina, a bon toki naba nanoia aomata ma katamwa ni kakaei kanaia mannikiba ao bunnatoi ake a uakaan ma aia kaawa.

Ma anuaia kaini Kiribati ni maiu, ma ni iangoa rekeni kanaia, e a reke bwa te marena imarenaia taani maeka ao mannikiba. Kaain te Betebeke, bwa tera aia reeti, bwa kaaini Mwaikoronetia, Meranetia, ke Boreneta, a kamani bwaati n tarai aroni maiua iaon taian abamwakoro ake a karako kaubwaia. E tiraua kanaia ae e kona n reke mai taari, ao anne are bon angiiini kanaia. Mai taari ao e reke kanaia. Bwaai ngkanne ake a reke man te aba, a kaboonganai ibukini katean aia tabo ni maeka, kunikaia ao aia bwai ni mwakuri, ma kaanga e kuri ni kangaanga rekeni kanaia mai iaon te aba. Man aaba ake a tira iai mannikiba, ao e a reke nnen te tanna nakoia aomata. E ngae ngke a kai reke kanaia, kunikaia ao bwaai riki tabeua mai itinaniku, ao kaain te Betebeke are a boni iangoa naba maiuia man te aba ke taari. Ma ngkai te aeka ni maiu aio e a moanna ni bitaki nakon te maiu are e kainanoaki iai te tianti. N abamwakoro tabeua, ao e a moanna ni bitaki te katei ke tein te maiu, tiaki ibukina bwa a kani bita anuani maiuia aomata, ma ibukina bwa ai bon akea riki aia aanga. I Tarawa, ao a bane ikari ao baneawa ao taiani kima naba. E a ukenako riki kiiraroa temanna ibukini iangoan rekeni konana te ingemea ao te ati ae e tau mwaitina. Ngkai, e a moanna naba n akea te bun n aekaia nako, ake a rangi n tiraua rimoa.

Teuana te tienture n nako ao ti irabubua kaain Tarawa. Ngkai, a maeka iaona 30,000 te aomata. Akea te abamwakoro ae buburan Tarawa ae e kona ni kamaiua te mwaiti n aomata anne mani kaubwain aona. Ma ai tibwa ngke e a taraa n ae e a moanna n aki tau te amwarake are e na reke mai taari, are ai akea aia aanga aomata ni maiu man te aba ai ngaia are a bita aroni maiuia. Ma e na riai n aki riki aekan aio iaoni Kiritimati. Ngkai, e ngae n ae e nang aki kainanoaki kaubwain te aba ibukin te tabo ni maeka ao te amwarake, a bon ewa naba amwarake aika a na kona ni buoka te maiu irouia kaaini Kiritimati, ma e na riai ni karaoaki n te anga are a na kona ni kabonganaaki ao a na boni kona naba n tiku ibukin rooro ake a na manga roko. Aio te bwai ae moan te kakaawaki, ai moara riki ngkai e a moanna ni keerake mwaitiia aomata iaoni Kiritimati. Ngkai e a rikirake te maiu ma ni kona n reke riki iai mwakuri, ao e nangi riai n akea are e nangi boni maiu naba n ti man te aba.

Kiritimati, bon te abamwakoro ae 16 te tai okiokin Tarawa iai, ma mwaitiia kaaina ti teuana te kaitimwakoro mai ibuakoia kaain Tarawa, ma ngkai e nangi moanna n akea te ikari. E a moanna naba ni keerikaaki mwaitin ana baneawa. E a moanna naba ni karako mwaitin te rereba n reke ao a moanna n uareereke. Ao a moanna naba ni bua mannikiba. E kangaa n reke aio? Te abamwakoro ae buburani Kiritimati, e na boni bae n tau kaubwain aona ni kamaiuia te mwaiti ae 5,000 te aomata, ke e aki? Eng, e bon tau! Ma 100 te ririki n nako ao boni inanon naba 30 te ririki n nako, ao akea aia karaun aomata te iaia are a kona n aroria nako n te abwaki ae 3 te kiromiita ni bonota iai matan te rawa. Ao akea naba aia kaa ke aia booti n aroni mwaitiia ae ngkai. E a taonaki nako te katei ibukin te nanonrang. E taonaki nako aroni babaairean te waaki n te aki iango raoi. Ngkai, n aron ae iaon Tarawa, ao a anaaki ngaa ma ngaa ikari ake a buti ni kaea taari bwa a na bung ao a aki tauaki ngkana a buti n oki rikaaki nakon te nama imwiin aia tai ni bung. Mannikiba a aikoa tiringaki ibukini kanan te utu teuana, ma a tiringaki bwa te bwaakaukau ao ibukin te kaakibotu. Irabubua mai ibuakoni ngaa ma ngaa bunnatoin te keeu ae e kanaki? Ao iraua aika a katukaki ni bubuaka? E aera ngkai ti na tabe iai?

came food. Land-based resources, on the other hand, provided shelter, clothing, and tools, but not much in the way of food. On the few atolls that had an ample supply, birds provided one of the only non-marine sources of protein. Even when food, clothing and other products from abroad became readily accessible, subsistence living remained at the core of Pacific island life. Only now is this way of life beginning to give way to a cash-based economy. On many islands, the traditional ways are not changing because the people want change; they are changing out of necessity. In Tarawa the bonefish are gone, and the milkfish and giant clams are nearly gone. One must go farther and farther to find a good day's catch of tuna and mackerel. Even many of the shellfish that were once so common are disappearing.

A century ago, Tarawa supported a few hundred people. Today, it "supports" 30,000 people. No atoll the size of Tarawa can support that many people at a subsistence level. But it was not until the seemingly endless supplies of food that the sea provided were nearly exhausted that the people were forced to abandon, to a large extent, their traditional way of life. It does not have to be that way on Christmas Island. While complete dependence on the island's natural resources for food and shelter may no longer be practical or desirable, Christmas Island still has enough natural food resources to supplement the diets of its inhabitants as long as they are managed and conserved so that they will continue to be available for future generations. This is especially important as the population of the island continues to increase. As the economy grows and more jobs become available, no one should have to rely entirely on the island's resources for subsistence.

WHAT DOES THE FUTURE HOLD?

Christmas Island is 16 times the size of Tarawa, yet it has only one seventh of the people. But already, its bonefish are disappearing. Milkfish are also declining. Trevally are both fewer and much smaller than before. And the birds are beginning to disappear as well. How can this be? Surely, an atoll the size of Christmas has the resources to support 5,000 people. Yes, it does! But 100 years ago, even as recently as 30 years ago, people did not have nylon-mesh gill nets that could be stretched across a 3-kilometer-wide channel. Nor did they have motor vehicles and motor boats, at least not in the large numbers we see today. Greed has supplanted tradition. Short-sightedness has supplanted planning. Now, as on Tarawa, the bonefish are being caught by the thousands as they head out to sea to spawn, not as they head back into the lagoon after they've spawned. The birds are no longer killed to feed one's family; they're being killed for sale and for sport. How many of the hundreds of thousands of Sooty Tern eggs collected each season are really consumed? How many are left to rot? Why does it matter?

It matters for a number of reasons – reasons that profoundly affect everyone who lives on Christmas Island: culture, tradition, family, aesthetics – and money. Harvesting birds, like fish, to feed one's family is an accepted practice in many parts of the world, and it should be no different on Christmas Island. Those few who over-harvest do so for any of several reasons.

Ti na bon riai n tabe iai; aikai bukina – a na boni bane n rootaki kaini Kiritimati ni kabane iai; n aron te maiu, te katei, te utu, tangirakini bwaai aika a tamaroa (aesthetics) ao te mwane. Kanakin te mannikiba ibukini kamaiuan te utu teuana ma teuana bon te bwai ae e kaakaraoaki n te aonnaba ao e na bon riai naba n aki okoro iaoni Kiritimati. Ma ngkana e anaaki n te mwaiti ae e rangi n tira, ao e a riao ae e riai, ao e na boni kona n rootaki iai aia koraki aomata, raaraoia ao boni ngaiia. Ti a ana te ikari bwa te katooto. Bon akea ae e na kakewea ngkana ti kaangai bwa Kiritimati, ngaia kautun te tabo ni kaneweaba. Ni kabane aomata ake a mena iaoni Kiritimati, a na boni bae ni boo ni mwanen te kaneweaba. N aron are e taekinaki mai imwaina, taan akawa ngaia ake a boni karika 90 te katebubua mai ibuakoaia taan neweaba. Ma tera bukin rokoaia taan akawa? Bwa a na akawa te ikari. Ma e a moanna n tawe ni bane te ikari ao ai uana naba ma taan neweaba aikai ao aia mwaane. A aki moanna ni bane ikari imwiin akawaakiia irouia uaakai. Taan akawa aikai, a manga kaoki ikari nako tarii, n aki tiringiia imwiin rekeia. A boni moanna ni bane ikari ibukina bwa a anaaki n te mwaiti ae e rangi ni korakora ao n riao irouia aomata aika a aki iango, tao raaraom ke tao boni kaain am utu. A rangi ni korakora n anaakia n te aro are e aaki reke aia tai ni manga kaabung ni kaoka mwaitiia. Akea te ikari, ao akea naba taan akawa. Ao anne beebeten taekana. Ngkana akea taan akawa, ao a na bon akea kain ruun te outero ae te Kaben Kuuka Outero. A na karako irua ibukin taian tabo n amwarake ao taian titoa ni bwaintangira. A na akea ake a na tangoi taiani kaa, turaki ao booti. A na bon akea ana bwatintia te “Air Kiribati.” A na akea aia mwakuri aomata ake a kakaneweaba. Ngkana e reke aio, ao ko na rootaki?

Angiia aomata a ataa te kangaanga aio. Iai naba taian tua ake a tia ni karaoaki ibukini buokan totokoon aekani mwakuri aikai. Ma e bon riki. Ibukin tera? Kiritimati te tabo ae e uareereke mwaitiia aomata iai. N aekan Ronton, are te kabanea ni bubura ni kaawa, bon ti 1,500 kaaina. Ao kaiina, a boni kinaia ibon irouia. Angiia bon taian utu ao taiani koraki. A ewa riki aika bon tenaani koraki naba ma a raroa riki. Ao te aomata temanna, e bon aki kona n uotarikaaki utuna. Bon te bwai ae e aki kakaraoaki, e ngae ngkana te bwai ae e karaoaki, e na bon rooti utu ni kabane n taai aika a na roko. Ma ae e na bon reke naba bwa iai ibuakoaia taani urua te tua ae a na wareka te boki aio. Ngkoe, are ko aki tootoki ni urua te tua ao ko a butiaki ngkai. Ngkana ko tau mannikiba ao n anai bunnatoia, ko tangiria ni kan kakeaa maiuia am koraki ao raaraom? Tao e koaua ae ngkai, e rangi ni maiu raoi am utu, tao e a rangi ni maiu raoi riki nakon are rimoa. Tao ibukina ae e a ewa kanam te ika ao e tiraua naba am bwaakaukau? Ao iai mai buokan ika akanne aika tenaani ikari aika a bia? E reke naba aron am utu man te mwakuri ni kaneweaba? Ao e na tera ke e na kangaa maiuia am utu ngkana ai akea taan neweaba ao ai akea te ika?

Ma te boki aio, boni ibukin rongorongoa mannikiba, ma tiaki te ikari. E ti kabonganaaki te ikari bwa te bwai ni katooto kiona bwa anne ngkai te bwai ae e a bon riki ao angiia aomata a ataa. Te bwai naba aio are e a riki nakoia tenaani mannikiba, ma angiia aomata a tuai n ataa raoi te kangaanga ae e a riki. A rangi n tawe akeia taiani keeu, ai uana naba ma te taake ao te mouakena. Ibukin tera? Ibukina bwa aomata a anai bunnatoin te teeu ao te karakara, te io, te raurau, te matawa, ao a tiringii taian taake ao mouakena n te mwaiti ae e a bon rangi n riao nakon are a boni kainnanaoia. Mannikiba aikai ake boni ngaia tabeman mai ibuakoni mannikibani Kiritimati aika a rangi ni kakamataku ao ake a na katika nanoia taan roko n neweaba, are e na boni kamwaita mwaitin te mwane roko n te aba. Ngkai, a rangi n tiraua mooa ma bunnimooa ake a bwakaukauaki n taiani mwaakete ao ake a kaawakinaki irouia aomata ni mwengaia ibukini kanaia, ai ngaia are anaakia mannikiba ma bunnatoia n te mwaiti ae e rangi n riao, tiaki te bwai ae e na riai ni karaoaki, ao bon te mwakuri ae e rangi n rawaawata man akea riaiana.

But in doing so, they ultimately harm their own kin, as well as their friends and themselves. Let's use bonefish as an example. No one will dispute that Christmas Island's leading industry is tourism. Everyone on the island benefits to some degree from the revenue that tourists bring in. As mentioned earlier, fishermen comprise some 90% of the island's tourists. Why do the fishermen come? To catch bonefish. But the bonefish are rapidly disappearing, and so are the tourists and their money. The bonefish are not disappearing because the tourists have caught them all. Tourists release unharmed the bonefish they catch. They're disappearing because a few unthinking people, people who live on the island – your friends, perhaps even someone in your family – are harvesting them in numbers so large, the population cannot replenish itself. No more bonefish, no more fishermen. It's as simple as that. Without the fishermen, rooms at the Captain Cook Hotel will be empty. The restaurants and gift shops will have few customers. Cars, trucks, and boats will remain unrented. Air Kiribati will no longer be able to fill its planes. Guides will be out of a job. Would any of this affect your livelihood?

Most people are acutely aware of this problem. There are even laws in place that are designed to prevent this sort of activity. But it happens anyway. Why is that? Christmas is a small community. For example, London, the largest town, has only 1,500 people. Just about everyone knows everyone else. Many are family and close relatives. Many more are distant relatives. One does not disgrace a member of one's own family. It's just not done – even if your own livelihood is at stake. But at least some of the people who will read this book are the poachers. It is the poacher that is the subject of this appeal. If you are poaching birds or their eggs, do you wish to deprive your family and friends their livelihood? Sure, for the moment your family is doing fine, maybe better than ever before. Is it, perhaps, because you have plenty of fish to eat and sell? Are some of these fish gravid (pregnant) female bonefish? Does your family also benefit from tourism? How well off will your family be when both the tourists and the fish are gone?

But this book is about birds, not bonefish. Bonefish are used as an example because the bonefish crisis is real, it is happening now, and most people are familiar with it. The same thing is happening with the birds, only most people are not aware of its significance. The Sooty Terns are rapidly disappearing. So are the tropicbirds and the Masked Boobies. Why? Because people are taking tern eggs and killing tropicbirds and boobies in numbers far greater than that necessary to supplement their diets. These are among the most spectacular birds on Christmas Island and represent a potential major tourist attraction, which, in turn, represents a major economic boost. With chickens and eggs now readily available in the markets and being raised at home by many families, the harvesting of native island birds and their eggs is not necessary – and illegal.

Earlier, the question was posed, “Where are the birds going, and will they ever return?” Well, actually, they are not going anywhere. If adult birds fail to successfully raise young year after year, they will eventually die without raising enough young to maintain their numbers. With not enough young produced to replace those that die, the population will become smaller and smaller until it eventually disappears. It has not gone anywhere. But it is gone, nonetheless.

Ni moan te boki aio, ao ti tabeka te titiraki ae e kangai, "A nakea ngkai mannikiba aikai ao a na manga oki ke a na aki?" Ma ni bon tokina, ao bon akea te tabo ae a na nako iai. Ngkana mannikiba ake a ikawai, a aikoa kona ni kaikawaia raori natia n te ririki teuana ma teuana, ao n tokina a na boni mate ao a aikoa reke oneani mwiiia. Ngkana e aki tau mwaitiia mannikiba ake a uareereke n ruruamwiiia ake a mate, ao ni bon tokina, e na keekeerikaaki mwaitiia ni karokoa ae ai bon akea. Akea te tabo ae a nako iai, ma ai bon akea.

"Ma, ai bon tirauara riki aekani mannikiba n aaba ake tabeua," anne ae ko na taekinna; raon naba te titiraki ae e kaanga, "A aki kona n roko tabeman mai ibuakoni mannikiba akanne ni kabwakabwaka iaoni Kiritimati?" E na bon rangi ni kangaanga n reke aio. Mai imwiin aia kakaae taan rabakau iaonia mannikiba, ake a kakaie nako rongorongoia mannikiban te Betebeke ao te aonnaba, ao a tia ni kunea bwa e ngae n ae ti tebo taraakia aekani mannikiba ake a reereke n atimwakoro, bon iai okoroia n aron rikiiia ma mannikiban atimwakoro ake nikirana. Te bwai ae e teretere ikai, bwa rikiiia mannikiba aikai man te aba are a riki mai iai e oki rikaaki iraua te atu ni mannikiba. Ngke arona, bwa mannikiba aikai a aki tootoki ni kikibakiba man te abamwakoro teuana ma teuana ni kabwakabwaka iai, ao tao a na bon ti tebo teia. Ai ngaia are, ngkana a nako mannikiba mai iaoni Kiritimati, a boni kona n aki manga oki ni karokoa irabubua riki te ririki, ke a bon aki manga oki naba.

Ni ikotaki ma anne, ao Kiritimati, ai boni ngaia ngkai te tabo teuana ae e teimatoa iai maiua aekani mannikiba aika uoua, aika, te ruu ao te bwebwe ni marawa. Aekani mannikiba aika uoua aikai ai akea man atimwakoro ake a meemena naba iai bwa mwiiia katamwa, kimoa ao aomata. Kiritimati, tao ai boni ngaia ngkai te kabanea n aba n te aonnaba ae e na reke angani maiuia iai. Ngkana ai akea mai iaoni Kiritimati, ao a boni kona naba ni bua man te aonnaba ni kabuta.

E bon rangi ni kamimi ma ni kakamataku aroni maiuia mannikiba iaoni Kiritimati. Akea te kananououa bwa boni ngaia te anga ni kaneweaba teuana ae e na rangi ni bubura ae tuai moa ni karaoaki iaon te aba aei. Tao e na aki kona n onei mwiiia anga ni kaneweaba ake a rangi n ataaki n ai aron te akawa n te burae (fly-fishing) ao te tebo ma e na boni kona n rangi ni ibuobuoki n te karekemwane naba. Ni iangoan te rawetamnei ao matakuaikinaia mannikiba aikai, ao aomata ake a bon rangi n nano n aio, a na boni bae ni kairiia aia utu ni kabane. Ake a aki rii nanaoia n te akawa ke te tebo, a na roko ti ibukini matakuaikinaia mannikiba aikai. Ma a na bon aki roko ngkana akea te mannikiba ae e na matakuaikinaki. Ao a na bon aki roko naba ngkana a ongo bwa a tiringaki n aki akaaka mannikiba aikai. Bon akea ae e na kan norii kanoan nanaoia mannikiba n raea ke tenaani mannikiba ake a bibiribiri iaontano mai imwiini kamwaotoani baiia n aekan ae e a tia n nooria te tia korokarakai.

Ma te tau man irouia aomata, tiaki ti ngaia aia kangaanga mannikiba. Katamwa ao kimoani Boreneta ngaia naba aia kangaanga mannikiba teuana ao e na maan riki aroni katokaia, e ngae naba ngkana e rangi n nakoraoi te waaki. N taabo ake a nako iai aomata, ao a na bae n ririmwi katamwa. E kangaanga raurenakoia aomata ma aia man. E tekeraoi Kiribati bwa e rangi ni matoatoa ana tua ibukini karokoaia kamea aine. Ma e boni kangaanga kamwakuran te aeka n tua aio ibukiiia katamwa. E aki rangi ni beebete kinakiiia bun ni katamwa aine ma bun ni katamwa mwaane. E rangi ni beebete karokoaia katamwa ni karaba n eka nako te tua. Ao katamwa, a rangi ni bwaati naba ni karabaia n taiani kaibuke ao n aerake n te bong n aki nooraki ngkana e a rooro te kaibuke. Ma te bwai riki ae e rangi n ataaki, bwa a kaman roko katamwa ikai imwaain ae e katabuaki karokoaia. Taiani kamea iaon abamwakoro a kuri ni kangaanga maiuia i buakonikai: ma katamwa a rangi ni kai maiu i buakonikai. N te aonnaba ni kabuta, ao katamwa boni ngaia ake a kabuai mataia tibitiiti ni mannikiba, nakoni bwaai riki tabeua.

"But, there are plenty of birds on other islands," you say. "Can't some of these come to Christmas to breed?" For a few species, perhaps. But for the others, most unlikely. Researchers studying birds on islands in the Pacific and the rest of the world have learned that, while the same species found on each of the islands may look alike to us, genetically, they are different from those on all the other islands. What that tells us is that their ancestral lineage on their home island goes back many, many generations. If these birds were moving freely between islands to breed, then their genes would be essentially identical. So once the birds are gone from Christmas, they may not be replenished for hundreds of years.

Additionally, Christmas Island is now the last stronghold for two species, the Phoenix Petrel and the Polynesian Storm-Petrel. These two species have already been eliminated from most of their other native islands by cats and rats and people, and Christmas Island may be the last place on earth where they have a chance of surviving. If they disappear from Christmas, they could be gone forever!

The birdlife of Christmas is truly remarkable. It is, without doubt, the greatest untapped source of tourism on the island. It may not replace fly-fishing and diving as major tourist attractions, but it will complement them in many ways. With the prospects of birdwatching and photography, avid anglers will be more inclined to bring their whole family. Those not interested in fishing or diving will come just to witness the spectacle of birds. They surely will not come if there are no birds to see. But they will also not come if they hear that the birds are being slaughtered. No one wants to see piles of bird carcasses or helpless birds running around with their wings broken off, as the writer and others have seen.

CATS AND RATS

Poachers are not the only problem faced by the birds. Feral cats and Polynesian rats present another problem, one that will take much longer to control, even under the best of circumstances. Wherever humans go, cats are never far behind. Humans and their pets are inseparable. Fortunately, Kiribati has a strict policy against the importation of female dogs. Unfortunately, such a policy is all but impossible to enforce with cats. Male and female kittens are not always so easy to tell apart. Cats are easier to import illegally. And cats have a tendency to stow away aboard ships, only to come ashore at night unnoticed once the ship has reached port. But more importantly, cats were already here before any importation restrictions on pets were established. Dogs on islands rarely survive for long in the wild; cats do. Worldwide, cats have been responsible for the extinction of more species of birds than perhaps any other single factor. Fortunately, cats cannot swim (or at least elect not to). It is for this reason alone that Christmas Island still has so many birds. But cats are already well established on the main island. The question now is not how to prevent their spread but how to get rid of them.

Rats present a different, and ultimately, much more ominous problem. You might wonder, "How can these mouse-sized Polynesian rats be such a big problem?" First, they have been here for at least a hundred years,

Tekeraoina bwa a aki kona n uaua katamwa (ke a bon aki kan uaua). Bon anne bukina teuana ae a bon tiku naba n ewa mannikiba iaoni Kiritimati. Ma katamwa a bon rangi n tira iaon abani Kiritimati are e bubura. Te titi-raki ngkanne e aki kaangai, bwa a na kaanga ni katokaki mwaitiia, ma e na boni kangai, a na kaanga ni kanakoaki taiani katamwa ni kabane?

Kimoa, ngkanne bon taiani kangaanga naba aika a kaokoro ma e na korakora te kabuanibwai mai irouia naba. Tao ko na taku, "A nang kangaa kimoa aikai n riki bwa te kangaanga ae e bubura?" Te moani bwai bwa a bon tia ni mena ikai tao e nakon teubua te ririki ke e nako riki ao a bon ewa naba taiani mannikiba. Te kauoua, bwa a rangi ni uareereke ibukin rekeni kabuanibwai aika a korakora ngkana a kabotauaki ma te mouakena, te kibwi, te koota, ke te eitei, ke te ruru ma te bwebwe ni marawa ake a tei ni kakamaaku ma ni bwakerikaaki wiia, ke te karakara, te keeu, te io, te raurau ao te matawa ma wiia ake a waikakang. Ao te katenua, bwa a bon aki kona n uaua nakon atimwakoro ake a uareereke akanne? Tao anne am iango! Ma kimoa aikai, a kona n uaua n te raroa ae e uakaan. Kimoaani Borenetia a kuri ni katoai atimwakoro ake a uareereke ni maeka iai, ni ikotaki ma Motu Upua, Motu Tabu ao Cook Island are a mena n te nei are e bubura. Ma n teina, ao a aki uaua nakon atimwakoro aikai. Tao te bwai ae e riki, bwa a uotaki nakon taabo aikai irouia taian eitei, ke a toka n taiani booti n akawa ao ni kaneweaba ake a rooroko n atimwakoro aika a uareereke aikai.

N taraakina, ao kimoa aika uareereke aikai, a bon aki kona n roro waaia irouia mannikiba ake a bubura ma n tei ni kakamaaku wiia. Ma, man taiani kakaae rongorongoo ake a tia n reke man aban nako te Betebeke, ao bon te aeka n tamnei teuana ae e a tei. A moanna n nooraki kimoa aika a moanna n tira aikai bwa ngaiia bukin akeaiia mannikiba. Ngkana ko taku, bwa e aki kona n reke ana tai te kimoa ngkana e a aitaro ma te mannikiba ae e bubura riki ae e waikakang wiina, ao bon tiaki ngaia anne koauan te rongorongoo. Mannikiba aikai, a aki taneiai n otanganiia ma bunnatoia ao natiiia mai irouia tenaani kaakang aika a tei n aki kakamaaku aikai. Ni bon etina, ao mannikiba, a aki ataia bwa bon tenaani kaakang kimoa aikai. Bwa te kimoa ae e uabibingo, e kona n rinnako iaan te taake ae e toka iaon bunnatoina ma ni kabwawangawangaa bunnatoina ni wiina ao n nima kanoana n aki nooraki. Tao bon aio te kabwarabwara teuana ibukin te taake are e nooraki iroun te tia korokaraki n toka iaoni bunnatoina ae ai akea kanoana ao iai te bwangabwanga ae e uabibingo ae 3 te mirimiita buburana ni mena n te bunnatoi anne. Ao tera riki kabwarabwaraakiia bunnatoia taian io ake a katukaki i bon irouia, ni iai naba aekani bwangabwanga aikai iaioia?

Ma ngkana a tia ni mena ikai kimoa inanon irabubua te ririki ao a bon ewa naba taiani mannikiba, ao tera te kangaanga? Ma e ngae ngke a boni kaman roko taiani kimoa, a bon tiba roko n taian atimwakoro ake a uareereke. Atimwakoro aikai ake ngaiia aia kabanea n tabo ni katntan angini mannikiban taari ake a mena i Kiritimati. Ngkai a roko kimoa aikai iaon taian atimwakoro aika a uareereke aikai, ao n aron ae e a tia n riiriki man nooraki iaon aban te Betebeke, e na aki rangi ni maan ao a na akea mannikiba.

Ngkai, te kimoa are e bubura ma ni kakamaaku riki are te kimoa are e roroo, e a tia n nonooraki iaon Ronton. Ngkana e aki reke angan tiringana, ao e na boni kaabung ni kabutaa te aba. Kimoa aika a roroo aikai, a uouoti manin aoraki ake a kai ewe nakoia aomata, ai ngaiia are tiaki ti ibukiia mannikiba ae a na riai ni kaakeaaki iai maan aika a kakamaaku aikai.

E na karikii kangaanga te kimoa n Noruee n aekan aika a tia ni koreaki ikai. E ngae ngke e tuai n nooraki ke ni koreaki taekana bwa e a tia n noraki iaoni Kiritimati, e a moanna ngkai n rikirake te botanaomata iaoni Kiritimati, ai uana naba ma keeraken roorokon taiani kaibuke ma karokoan taiani bwai ma amwarake mai tinaniku. Ni bon tokina ao e na aki rangi ni maan imwaini kaotin te aeka ni kimoa aio iaon te abamwakoro aio, ti ngkana arona bwa a waakinaki aanga ibukin totokoani karokoana. Aanga aikai ake a na kabwarabwaraaki n te mwakoro e imwina.

and perhaps much longer, and there are still plenty of birds. Second, they're too small to do much damage to a booby or a frigatebird, or even to a petrel with its wicked hooked bill, or a tern with its equally formidable dagger-like bill. And third, surely they cannot swim out to these islets. Or so you might think! These rats can swim, at least short distances. Polynesian rats are now on nearly every small islet, including Motu Upua, Motu Tabu and Cook Island in the main lagoon, and many of the islets in Isles Lagoon and the other lagoons near Carver Way. However, it is not likely that they swam to the most isolated of these islands. Most likely, they were carried there by frigatebirds or stowed away on the many fishing and tourist boats that now visit the islands.

Surely, these tiny rats are no match for a big bird with a deadly beak. Unfortunately, evidence now coming in from other islands across the Pacific paints a different picture. More and more, Polynesian rats are being seen as one of the main culprits in the demise of seabird colonies. While one might think a small rat would be doomed when confronted by a much larger bird with a sharp beak, such is not the case. These birds are not adapted to defend themselves, or their eggs and offspring, against such a harmless appearing predator. In fact, they probably do not even recognize the rat as a predator. A small rat could slip underneath an incubating brown noddy, nibble a tiny hole in its egg, and suck out its contents while going virtually unnoticed. Perhaps this explains the tropicbird recently seen by the author incubating a hollow egg with a tiny, 3-millimeter-wide hole in its side. What else explains the many abandoned Brown Noddy eggs also found with similar holes in them?

But if the rats have been here for, perhaps, hundreds of years and there are still plenty of birds, what's the problem? The rats may have been around a long time, but they have apparently only recently reached the islets – until now, the last safe haven for many of the island's seabirds. Now that they are on these islets, as recent experience on other islands in the Pacific demonstrates, it is only a matter of time before the birds will be gone, especially those that nest on the ground.

Now, the much larger and much more dangerous black rat is being seen regularly in London. Without measures to eradicate it, it too will soon spread throughout the island. Black rats also carry diseases that are easily spread among humans, so there are reasons other than the birds, to keep this pernicious pest at bay.

The Norway rat presents a similar problem. Although it has not yet been recorded on Christmas Island, with the expanding human population and increased off-loading of food and supplies from abroad, it is only a matter of time before it, too, invades the island – unless proper preventative measures are taken. Suggested measures are discussed in the next session.

Te Babaire Ibukini Kaawakinaia Ao Tararuaakia Mannikiba

CONSERVATION PLAN

**KAAWAKINANA + TARARUAAKINA =
KAOKANI MWIINA (K + T = KM)**

KARABWATAANA

Ai bon tibwa teuana te aeka ni mannikiba ae ai akea mai iaoni Kiritimati, e ataaki te mannikiba aio n arana ae te (Tuamotu Sandpiper), ao are ngkai iaoni kawaina ni bua man te aonnaba. A bon ewa nikiraia mannikiba ake te korakina n tiku, bwa 18 utuni mannikiban taari aika a kakaokoro ao teuana utuni mannikiba ake a meemena iaon te aba. A na riai ni manga oki mwaitiia mannikiba aikai n te tai are a kamaunaaki iai bwaai ake a aki tootoki n tiitiringiia ke ni kaakeaia. N te tai anne ngkanne ao are a na konaa ni manga nooraki ni kibakiba 25 te mirion te mannikiba are te keeu, ao ai tiaki ti te kanoaniami. Ao Kiritimati e na moan okira arona are ngaia te tabo are moan te tira iai mannikiban taari iaon te aonnaba. Ma te moani bwai, are moan te matoatoa karaoana: Kaawakinaia mannikiba. Kaawakinaia mannikiba e na karaoaki n tenua mwakorona: (1) Kaawakinaia mannikiba mai irouia aomata, (2) Kaawakinaia mannikiba mai irouia kimoa ao (3) Kaawakinaia mannikiba mai irouia katamwa.

Kaawakinaia mai irouia Aomata

Iai te tua ibukini kaawakinaia mannikiba. Te tua aio bon te Otenanti ibukin tararuaakini Mannikiba 1975 ma taian onoono nako iai. Iaan te tua aio ao a tararuaaki angia mannikiba. Ibukia mannikiba ake e a bwanin aroni kaawakinaia, e katabuaki kakaesia n tiringaki ao n tauaki. Tiaki ti te mannikiba ae e katabuaki ni karaoaki aio nakoina, ma ai boni ngaona, bunnatoina ao buraena naba. Iaan te tua aio, ao a kona ni kateirakeaki aomata ake a na tararuaia maan ao e a baaireaki naba iaan te tua aio bwa iai taabo ake a na riki bwa nneia maan ao inanon taabo akanne, a na kaokoroaki ngkanne taabo ake e na katabuaki te roko iai. Tenaan Uooten ibukia maan aikai a na bon anganaki te mwaaka ni kakaesia ma ni katikiia aomata ake a karamakinaki bwa a ekaanako aia tua, n akea te ota mai iroun te Tia Moti ao n akea te beebwa ni katikitiki. Ma e ngae ngkai iai te mwaaka aio irouia Uooten aikai, a bon aki kona ni karaoa raoi aia mwakuri ngkana a aki ibuobuoki aomata ao te kabowi. Ma a bon ewa aanga ibukini kaungan nanoia aomata bwa a na ibuobuoki.

Te mwamwananga ao te neweaba ibukin noorakini kaubwain abara n aanga ake a aki urubwai nakon te aonnaba (Ekotuaritim), ai boni ngaia ngkai te anga ni karekemwane teuana ibukia aaba ake a tabe n riirikirake, ake a boni kaawakini kaubwain abaia. Ao mai imwiin te kakaee, ao e rangi n teretere bwa matakuakinaia mannikiba, emoanibwai n te ekotuaritim. Ma imwaain ae a na kona n roko aomata ni matakua, ao ma n rawetamneia mannikiba iaoni Kiritimati, a na riai moa ni kaawakinaki mannikiba aikai. E na aki ti koreaki kaawakinaia iaan te tua ma a na bon riai aomata ni boutokaa naba aroni kaawakinaia. A na riai aomata ni kaungaaki nanoia bwa a na tangiria ni kani kaawakiniia aia mannikiba, ao a na aki kang. Ao a na riai n reireinaki aomata ake a tiri mannikiba, bwa tera bukina, bwa tao ibukini kanaia, aia kaakibotu ke ibukin aia karikirake, bwa e na rangi n tikiraoi riki ibukia ngkana a kaawakiniia aia mannikiba. Nikiraia aomata a bon ataa anne. Taani iraa mannikiba a na riai n reireinaki ma n tuangaki

**PROTECTION + MANAGEMENT =
RECOVERY (P+M=R)**

THE CATALYST? CONSERVATION

Only one native bird has disappeared from Christmas Island, the little known Tuamotu Sandpiper, and it is now on the verge of extinction. Populations of the other 18 species of seabirds and one landbird are still viable, if not completely healthy. Once the reasons for their decline are eliminated, their populations should rebound. Twenty-five million Sooty Terns can once again be a reality, not just a dream. And Christmas will regain its status as the place that has more seabirds than anywhere else in the world's vast tropical zone. But first, the hard part: protection. Protection comes in three parts: (1) protection from people, (2) protection from rats, and (3) protection from cats.

Protection from People

On paper, the birds are already protected. The Wildlife Conservation Ordinance of 1975, with its several amendments, is the legal basis for conservation throughout Kiribati. It fully protects most birds. Fully protected species are not allowed to be hunted, killed, or captured. This includes not just the bird itself, but its nest, eggs, and even its feathers. The ordinance allows for the appointment of wildlife wardens and the designation of wildlife sanctuaries and, within wildlife sanctuaries, closed areas. Wildlife wardens are given the power to search and arrest anyone suspected of committing an offense without an order from the magistrate and without a warrant. But even with this authority, the wardens cannot be effective without the cooperation of the people – and the courts. There are strong economic incentives for the people to cooperate.

Ecotourism has become the economic cornerstone of most developing countries that still retain much of their original natural resources. And statistics demonstrate conclusively that birdwatching is at the forefront of ecotourism. But before the birdwatchers will come to see, photograph, and videotape Christmas Island's birds, the birds must be protected – not just on paper, but in practice. The people must want to protect their birds, not eat them. The people who are killing the birds, whether for food, for sport, or for profit, must recognize that they will benefit more by protecting the birds. The rest already know that. The poachers must learn that *living birds are a more valuable resource than dead birds*, just as living bonefish have become a more valuable resource in a cash-based economy than dead bonefish. Changing

bwa a ewa riki bonganaia mannikiba ake a maiu nakoni mannikiba ake a mate. Kaanga ai aroia naba ikari ake a maiu, a uaana riki ibukin aaba ake te tianti te maiu iai nakoni ikari ake a mate. E rangi ni kangaanga bitakini kateira are ti taneiai iai. Ma ngkana arona bwa boni ibukini kabwaiara, a na kai bitaki aroaro ni kawai nakon aroaro aika a boou. Kangi moa ma tai kang taian taake, kana bunnimoan te moa ma tai kana bunnatoin te karakara, te keeu, te io, te raurau ke te matawa. Ai bon anne beebetena.

Kaawakinaia mai irouia Kimoa

Kauouani mwakoron te iango aio are ibukini kaawakinaia mannikiba, ai boni kamaunaakini mataia kimoa. Aio are moan te matoatoa karaoana. Te kimoa aio are moan te uareereke are e aranaki bwa kimoani Borenetia (Polynesian rat), a mena n taabo ni kabane. Tao e nakon te mwaiti ae teuana te mirion kimoa aikai iaon te abamwakoro aei. Ai ngaia are, e aera ngkanne ngkai ti aki kamenaa te iango ae moan te matoatoa aio n te kabane? Ngkana arona bwa e a moti ara iango bwa ti nang kaakeaia katamwa ni kabane ao e a bwai ara waaki anne, imwiina, ao ti a manga kataia ni kaakeaia kimoa. N teina ae ngkai, e kakuaaki bwa e aki roko mwaitiia kimoa n te ware ae tebwina te mirion ibukin tirauaia katamwa! Ma ni iangoana teuana, bwa tao ti na kaakeaia moa kimoa ao imwiina katamwa, ke ni kaakeaia kimoa ma katamwa n teuana te tai, te moani bwa ae moan te kakaawaki bwa a na kabaneaki moa ni kanakoaki taanga ni kimoa aikai man taian atimwakoro ake a uareereke ake irabubua mwaitiia, ake a mena iaoni Kiritimati. Taabo akanne are a boni mena iai mwaitiia mannikiban taari ma tiaki te keeu. Atimwakoro akanne are ai boni nneni katikuia. N te tai are ai akea iai mannikiba aikai man atimwakoro aikai, ao are ngkanne ai bon akea naba mai iaoni Kiritimati. Ngkana e na waakinaki te waaki ibukini kanakoakiia kimoa aikai, ao te bwai are e na moan taraaki boni kakaekina bwa e ngaa te atimwakoro are e tatau iai mwaitiia mannikiba, bwa ngaia ngkanne are e na moani waakinaki te iango aio iai. Ni butin te waaki ao n noorakina bwa e nakoraai, e a konna ngkanne n reitakinako te waaki aio n atimwakoro ake tabeua ao rimwi ao ai bon nakon te aba are e bubura. Ao nningai te tai ae te kabanea n tikiraoui ibukini kaakeakiia kimoa man te aba are e bubura? Boni inanon tain ao imwiin te angibuaka ae moan te korakora (El Nino). Ao ibukin tera ngkai e tikiraoui te tai aio? Ibukina bwa n taai aikai, ao kaanga aj akea moa mannikiba. N taai akanne ao ai bon akea riki kanaia katamwa. N taai naba aikai, ni kabaneani bongin angibuaka aikai, ao mwaitiia kimoa, a na aki rangi ni mwaiti. Aio tain tiringakiia ngkana e a karako mwaitiia. Tiringiia n taai aikai ai moaraara riki, n taabo ake a boni kaabung iai mannikiba n aron Dojin, Abaia Katamwa, Tanguoua ao ana tabo te KOIL.

Ara kauoua ni waaki are kaakeaia kimoa, iai naba ana kauoua ni mwakoro. Ti na aki mwaninga taekan te kimoa roroo ao ibukin taai aika a na roko, kimoan Noruee. Maan aikai a na karika te kangaanga tiaki ti nakoia mannikiba ma nakoia naba aomata. A tia n urui waaki ni kariki-rake iaon te takataka n abamwakoro ake a mena iai. Taian aeka ni kimoa aikai ake a tia n kabwangabwangai taiani ben iaontano, ao irarikin anne, taiani kimoa roroo, a bon tatamwatamwa ma n tenatenai taiani moimoto n taian nii. Kimoa aikai, ni ikotaki naba ma kimoa ni kabane, a bon nini-inako taian auti m mweenga ma ni kabutii man-aoraki nakoia aomata. A boni kang naba ma ni kabuaakakai amwarake ake a kaawakinaki ao a kona naba n tenai ni kamarakiia ataei ake a uareereke ao ataei ake a tabe n rikirake, ao tenaia aio, e boni kona naba ni kamaamate.

E na riai ni waakinaki kaboitinakiia kimoa iaon Ronton n te tai naba aio. E konna ni waakinaki te iango aio ao ma ni karekeaki nneia taiani boitin aikai ake a na aki reke iai irouia ataei ao aia man. E a tia ni waakinaki ma n nakoraoui iaon te aonnaba. Ao e na konna n nakoraoui naba waakinana iaoni Kiritimati. E na rangi ni beebete riki tiringakiia kimoa ngkana e uareereke mwaitiia nakon ae a tira mwaitiia ao a na rakanako riki mwaitiia I Ronton.

habits is always difficult. But if the rewards are great enough, new ways will soon replace the old ways. Eat chicken, not tropicbirds; chicken eggs, not tern eggs. It's that simple.

Protection from Rats

The second part of this three-part plan, rat eradication, is without question the hardest to implement. The diminutive Polynesian rat is everywhere. There may be a million rats on the island. So, why not save the hardest for last? Suppose we decided to get rid of the cats and were quite successful at it. Then we decided to go after the rats. Right now, the cats are perhaps the sole reason there are not 10 million rats on the island! But either way, whether we go after the rats first and the cats second, or both simultaneously, the highest priority is to rid the hundreds of small islets of rats. Except for Sooty Terns, that is where the majority of the seabirds are. This is their last stronghold. Once they are gone from these islets, they are gone from Christmas. Any rat removal program must first focus on those key islets that support the largest seabird populations. Once the program has proven successful, then it can be expanded to other islets and eventually to the main island. The best time to go after the rats on the main island? During and just after a major El Niño event. Why? The birds are temporarily absent. The cats have nothing else to eat. Rat populations should be at their lowest during the latter stages of a major El Niño. Hit them when they're down, especially in key areas of the interior where many bird species still nest, such as Dojin, Cat Island, Tanguoua, and the KOIL Site.

The second part of our bird protection program, rat eradication, itself has a second part. Let's not forget the black rat, and potentially, the Norway rat. These animals pose a major threat, not only to the birds, but to the people. They have devastated the copra industry on other islands where they have become established. Both species gnaw holes in coconuts on the ground; however, black rats are adept at climbing trees, and also gnaw holes in coconuts still growing on the tree. Rats invade homes and spread human diseases. They eat and contaminate stored foods, and can inflict painful, even fatal, bites on babies and young children.

An intensive rat poisoning program must be initiated in London immediately. Rat poison can be dispensed in a way that makes it inaccessible to children and pets. It has worked in the rest of the world. It will work on Christmas. It is much easier to get rid of the rats while their numbers are still low than it will be when they are high, and the population has spread beyond the limits of London.

If a permanent dock is established in London (or elsewhere), it is imperative that all docking lines have rat guards to prevent rats from walking down the lines to the dock and re-invading the island. All incoming ship supplies should be carefully inspected for the presence of rats (and other noxious pests) before they are off-loaded. An ongoing monitoring program for rats in London and other populated areas will serve as an early warning system, should rats begin to appear on the island again. Once detected, they should be eradicated as quickly as possible. This is likely to become a recurring cycle of local invasion and eradication as the human population and industry expand on the island.

Ngkana arona bwa e kateaki te taoki i Ronton (ke n te tabo riki teuana), e rangi ni kakaawaki bwa a na iai iaon taian rain ake a tiki man te taoki, bwaai n tuukii kimoa bwa a na aki kona n aerake man te kaibuke n ninia nako te aba. Taiani kaibuke ni kaako ake a roko ma uotaia te kaako, a na riai moa ni bane n tuoaki aia kaako bwa a na akea taiani kimoa ke maan riki tabeman iai imwain are a kawaerakeaki. Ngkana arona bwa iai te waaki n tararua ibukin kaakeaia kimoa ae e waakinaki iaon Ronton ke n taabo riki ake a maekanaki ao e na riki te waaki aio bwa kai ataakiia kimoa ni moantaai ngkana a manga moan oti riki mata-ia iaon te abamwakoro. Ngkanne, n noorakia anne, ao a na riai ni kaakeaaki n te tai naba anne. Are nanona bwa n rikiraken te botanaoma-ta ma te karikarake iaon te abamwakoro aio ao a boni bae naba ni kakaoti kimoa ao a na riai n tiringaki naba n te tai ae e waekoa.

Kaawakinaia mai irouia Katamwa

Mwakoro Tenua: Kaakeaia katamwa anti. Boni iai ana waaki n tau katamwa te Botaki n Tararua ibukii Maan. (Wildlife Conservation Unit.) E ngae ngkai iai nakoraoin te waaki aio ibukini kauareerekeani mwaitiia katamwa n taabo tabeua iaon te aba are e bubura, ike a tira iai mannikiba ni kabwakabwaka, a bon aki konaa ni baabane katamwa n te mwakuri ae te tau katamwa. E kainanoaki riki te waaki ae e oomwaaka riki. Te moani bwai are e riai ni karaaki boni katokani boton te kangaanga aio, are boni katamwa ake a maninaki irouia aomata. Ma tiaki nanona bwa a nangi bane n tiringaki katamwa ake a maninaki! Ma katamwa anti aikai, boni ngaia naba ake a buoka te kangaanga aio ibukina bwa a riki katamwa anti mai irouia. E na riai ni waakinaki koreakiia katamwa aikai bwa a na aki kariki n te aro ae e na tuukaki tirauaia katamwa rimwi ake a nako ni maeka i tinanikuni kaawa ike a mena iai mannikiba.

N teina, te kabanea ni kakai ni waaki ibukini kaakeaia katamwa anti bon kabutan te manaoraki ae te "panleucopenia virus" ibukii katamwa n aia tabo i buakonikai. Te man-aoraki aio e na boni buti ni waekoa ibuakioia utuia katamwa. Ma ibukini kanakoraon te waaki aio, ao e na riai ni iri-anaki ma te tau katamwa ao te katii katamwa, ao e na riai ni waakinaki ni karokoa ae a bane n akea katmwa anti. E a bon tia ngkoa ni kataaki te waaki aio rimoa ma e riki ni katokaki iaan ae iai ngkoa te nano uoua iaoni bwaai ake a na kabonganaaki iai, bwa a na tera mwiiia nakoia aomata ao a bon aki reereke naba beeba ake a na riai ni karekeaki ibukini waakinana. The man-aoraki ae te "feline enteritis virus" e bon aki kamaamate nakoia aomata, ao katamwa ake a maninaki, a boni kona ni bwai n aorakiaki bwa a na aki rootaki n te man-aoraki ibukii katamwa aio.

Te waaki riki teuana are e na omwaaka iai kauareerekeia mwaitiia katamwa boni katokan aia kariki katamwa anti. N taai aika a nako, iai kanaia katamwa ae e a tia ni katauraaki are e boni katoka aia kariki. Te amwarake aio are e na boni konaa ni katukaki n taabo ake a tira iai katamwa anti. N reitaki ma te waaki are e kabonganaaki iai te man-aoraki ae te "feline enteritis virus", te tau katamwa ao te katii katamwa, e na rangi n oomwaaka naba te waaki ae e taekinaki aio ibukini kamau-naakini mataia katamwa mai iaon te abamwakoro. Ma te moani bwai are e na ukoraki ma n taraaki bwa a na riai n aki rootaki aomata ni kanaia katamwa aikai. Ke a na riai n aki konaa n rootaki aomata ngkana arona bwa a kangi mwanai ake a kang abea aikai. Aia taokita maan are e taneiai ma abea ni katoki kariki aikai, e na riai ni konaa ni kaekai aekan titiraki n aron aikai.

Te waaki ibukini katokan aia kariki katamwa, ni kaairaki ma te tau katamwa, bon te waaki ae e na maani karaoana ma e na bon rangi n omwaaka ibukini kaakeaia katamwa anti. E kona ni kauntaekaaki bwa e rangi ni iremwe te waaki aio; ma e boni konaa naba ni kauntaekaaki bwa e aki kaungaaki te iango are a nangi boni bane n tiringaki katamwa anti n te tai ae e rangi n waetata. Bwa ngkana e karuaki ni iangoaki, a na bon rangi ni ibuobuoki katamwa aikai ibukini kaakeakiia kimoani Boreneta.

Protection from Cats

Part three: feral cat eradication. The Wildlife Conservation Unit has an ongoing cat trapping program. While somewhat effective in keeping cat numbers down in areas of the main island with vital seabird nesting colonies, cat trapping by itself will never eradicate the cats. A much more intensive and effective program is needed. The first step is to eliminate the problem at its source, the household pet. No, pet cats need not be eliminated! But they are part of the problem. They are the source population for the feral cats that roam the interior. A mandatory sterilization program would prevent the unchecked proliferation of cats and their inevitable spread away from populated areas to more remote regions where most of the birds nest.

Perhaps, the most effective way to rid the island of feral cats is through introduction of the feline enteritis or panleucopenia virus into the wild population. The virus will quickly spread through the population. However, in order to succeed, the program must be administered along with trapping, poisoning, and shooting, and must be continued until all the wild cats on the island have been eradicated. This procedure was attempted on the island once before, but because of misconceptions about its possible harmful effects on humans, the program was soon discontinued. The feline enteritis virus is not harmful to humans, and pet cats can be inoculated against the virus.

An effective feral cat eradication program also may entail sterilizing the feral cats. Recently an oral cat sterilization vaccine has been developed. This vaccine can be placed in cat food, and this bait can be distributed in areas of the island with high feral cat populations. In conjunction with the feline enteritis virus program, trapping, and shooting, this should be highly effective in eradicating the feral cat population from the island. But first, it must be determined that this vaccine has no effect on humans, or if it does, that it cannot be passed to humans through land crabs, for example, that may eat the bait and then be eaten by humans. A veterinarian familiar with this new vaccine should be able to answer these questions.

Management

Management programs are long-term and expensive, but they are extremely important, in fact essential, in protecting and ultimately recovering the bird populations on Christmas Island. But even if successful, they will be for naught if the bird populations are not managed properly. If any of the birds or their eggs are to be harvested as a food resource for the people, they must be harvested judiciously by people authorized and trained in this practice, so that nesting birds are not unduly disturbed or taken in non-sustainable numbers. Even if no harvesting is allowed, as is currently the case under recent legislation, colonies must be protected and monitored to discourage poaching, to prevent outbreaks of deadly avian diseases, and to ensure that pests like cats and rats never again become a threat.

Te Tararua

Waaki n tararua boni waaki ake a na rangi n reianau ao ni kabanemwane, ma waaki aikai a bon rangi ni kakaawaki ao a riai ni karaoaki ibukin tataruakini ao kaokani utuia mannikiba n aekaia nako iaoni Kiritimati. E ngae ngkana e nakoraio te tararua aio ma akea uaana ngkana a aki tararuaka raio mwaitiia mannikiba. Ngkana arona bwa a na karikirakeaki mannikiba ao bunnatoia ibukini kanaia aomata, e na riai n tararuaki te itera ni karikirake aio irouia aomata ake a bon tia n reiakinaki n te itera aio n te aro are a na aki rootaki mannikiba ake a kaabung ao ma ni katautauaki naba anaakini mwaitiia n te aro are a na bon ewa naba inanon taai aika a na roko. E ngae naba ngkana arona bwa e na akea te karikirake aio, a na boni riai naba n tararuaki mannikiba, ao a na riai naba n aki kaungaaki nanoia aomata bwa a na iraa n tiri man ke ni kimoai bunnato. Irarikin anne, a na riai naba n tararuaki mannikiba aikai man te aoraki ao ma ni katana-ki man taiani kangaanga irouia katamwa ao kimoa n aekaia nako.

Tao mai ibuakoni mwaitiia mannikiba iaoni Kiritimati, a na riai n rangi n tararuaki riki utuia mannikiba ake te ruru ke te bwebwe ni marawa. Bwa ngkana a bua aekani mannikiba aikai, iai te kangaanga ae kona n riki bwa a boni konaa naba ni bua n aki manga oki nakon te aonnaba. A kona n atongaki utuni mannikiba aikai bwa a nangi moanna ni bane man te aonnaba ae e tabwanin. Ai ngaia are a na boni konaa bootaki n te aonnaba ake a tabeakiniia maan n anga aia ibuobuoki ao n tauraio ni mwaneni waaki n tararua aikai. Ma e na ti konaa n reke te buoka aio ngkana e nooraki bwa a rangi n tauraio nanoia kaaini Kiritimati ni ibuobuoki ao ni boutokai waaki n tararua aikai.

Kaokaia

A ewa ngkai utuia mannikiba iaoni Kiritimati ake a reke n te kangaanga, teuana mai ibuakoia, bon taiani keeu. Te utu ni mannikiba aio are ngaia are e tatau mwaitina ibuakoia mannikiba ake nikirana. Ma e ngae n anne ao anuaia mannikiba aikai bwa a na boni bae ni bobootaki n tira mwaitiia n aki mamaenako. Ngkana arona bwa e kee mwaitiia nakon aia mwaiti are a tataneiai iai, ao a na konaa n aki manga tiku iaoni Kiritimati. Akea ae e ataia raio bwa iraua mwaitiia mai inano ae e na riai ibukia ao ni na bon aki tangiria naba ni kan ataia.

Ngkana a butiaki aomata ma ni kaungaaki nanoia bwa a na aki iraei bunnato, ao e na konaa naba n oki mwaitiia. Ao tao e na aki maan ao e a oki naba mwaitiia nakon aia mwaiti irabwi te ririki n nako. E konaa naba n reke aio, e ngae ngkana a na kanaki tao mwaitira bunnato n te ririki. Ma ngkana a na kamanenaaki bunnato, ao a na riai n tararuaki irouia aomata ake a tia n kariaiakaki ao ma n reireinaki n te itera aio.

E kona n riki Kiritimati bwa te aba are e na moani waakina tararuakini ao kaokani utuni mannikiban taari n aekaia nako ake a mena iaona. E na bon riki ngkanne bwa te banna ni katotoo ibukin te aonnaba ae e bwanin. Ngkana a nooraki waaki ibukini kaakeakiiia kimoa ma katamwa bwa a rangi n nakoraio, a na konaa ngkanne ni kabonganaaki waaki aikai n aaba riki tabeua n te aonnaba. N noorakin naba waaki aikai bwa a rangi n nakoraio, a na konaa naba ni kabonganaaki bwa waaki ni katotoo n aban nako te Betebeke. N aron are e taekinaki mai imwaaina, iai bootaki nako n tararuaiia maan ao rabwata ake a tauraio ni mwaneni waaki n tararua aikai n te tai are e nooraki bwa e boutokaaki te iango aio irouia aomata ao te Tautaeka ni Kiribati. N te tai naba are e a tei raio iai te waaki aio ao e na boni bae ni iai taiani mwane ake a na reke man te ekotuaritim ae e nakoraio ao e na konaa naba ni waakinaki ibukin tararuakini ao kaokani mannikiba n aekaia nako iaoni Kiritimati.

Perhaps more than any other species on Christmas Island, the Phoenix Petrel and Polynesian Storm-Petrel populations must be closely monitored. If these birds were ever to be lost, they may be gone forever. These two species may soon be classified as globally endangered. As such, they would be given special attention by international conservation organizations, and funding for their protection and management on Christmas Island may be more easily obtained, but only as long as the people who live on the island demonstrate a willingness to participate in a comprehensive management program.

Recovery

Several bird populations on Christmas Island are already in serious jeopardy, not the least of which are the Sooty Terns. Although still the most common species on the island, Sooty Terns are highly colonial birds. If their numbers are reduced below some critical level, they may cease to nest at all on the island. No one knows for sure what this minimum number is, nor do we want to find out.

If poaching of eggs is discouraged, numbers of birds should steadily increase, perhaps before long approaching those of several decades ago. This can happen even if a modest number of eggs are legally harvested each year by authorized and properly trained personnel.

Christmas could serve as a pilot program for the maintenance and recovery of its spectacular seabird resources. It would be the showcase for the rest of the world. Once demonstrated to be successful, the rat and cat control programs could be used on other islands throughout the world. The bird colony management and recovery programs, once demonstrated to be successful, could also serve as model programs to be employed on other islands across the Pacific. As mentioned earlier, a number of international wildlife conservation organizations and donor agencies may be interested in funding such a program once it has the support and commitment of the people and the Government of Kiribati. Once established, some of the revenues generated from a thriving ecotourism industry can also be committed to managing and recovering the bird populations on Christmas Island.

Korokaraki

ESSAYS



MANNIKIBA AKE A ARANAKI MAN TANGINI BWANAIA

“Bokikokiko.” Tiaki te taetae ni Kiribati. Ao tiaki naba te taetae ni Matang. Ao kaanga ai te aeka n ara tera? E aranaki te ara aio bwa te ara ae e rio mai imwiin ongoraeakinan tangin te aeka ni mannikiba anne, ke “onomatopoeia.” Te taeka ae “onomatopoeia” te taeka ae moan te anaanau ma ni kangaanga atongana ma moan te beebete nanona. Te taeka ae “onomatopoeia” te ara ae kaanga ti tebo ma tangin te bwai teuana. N ai aron taian tang aikai, “Kuake, Iti, Bwaati..., Ring, Tiburaeti, Bokikokiko.” Aikai taeka aika a bon reke araia man tangiia. N aron aekan taeka aikai ao a bon rio man taiani iango bwa iai bwaai aika a buti n te aonnaba aio n atonga te taeka ae “onomatopoeia, onomatopoeia, onomatopoeia,” ke akea.

Te mannikiba ae te “bokikokiko” e taekinaki bwa e atoatonga arana. Ke e reke arana man tangitangina. Irou, te tang ae i ongoongo kaanga “bo-kiite, ke kaanga – bo-kiite-eete.” Ngkana a roko nanoia ni karaki mannikiba aikai, ao a bon taetae irouia ni kangai “bo-kiite-bo-kiite,” ai moaraara riki n aia tai ni kabwakabwaka. Te tang aio, bon tiaki raoi “bokikokiko,” ma e kani boo ma ngaia.

E taraa n ae akea raoi oini mannikibani Kiritimati ma te Bokikokiko e kuri n reke iai. N tabetai e aranaki bwa te “Line Islands Warbler,” ke ni katuruturuaki n arana (e ngaie ngke e kaairua), bwa te “Christmas Island Warbler.” Ma te mannikiba aio akea riki te tabo n te aonnaba ae e reke iai ma bon ti Teraina). E kuneaki naba ngkoa iaon Tabuaeran ma e riki n akea imwiin rokoaia kimoa ake a roroo. E aki ti reke te mannikiba aio n aaba aika uoua aikai n te aonnaba ma bon ti ngaia naba mannikiban te aba ae e kuneaki iaoni Kiritimati. Bon te kamimi bwa a kangaa naba ni moan roko ikai mannikiba aikai. Ma n angiin aban nako te Betebeke, boni iai naba mannikiba aika a kuri n ti tebo ma te mannikiba aio, n reke n taabo akanne. A bon tannako aekaia ma ni kiba aikai n aaba ake a mena iai. Ma utun ni kaan te mannikiba aio e reke i Atia. N aaba ake a uareereke irarikin Atia, a bon reke iai man-

THE ONOMATOPOEIA BIRD

“Bokikokiko.” It’s not I-Kiribati. It certainly isn’t English. So what kind of name is it, anyway? Well, it’s onomatopoeic. Onomatopoeia is a long, unnecessarily complex word for a very simple concept. An onomatopoeia is a name that sounds like a sound. Quack. Hiss. Buzz. Ring. Splash. Bokikokiko. These are words derived from the actual sounds one hears...which leads one to wonder if there is something in nature that goes around saying “onomatopoeia, onomatopoeia, onomatopoeia.”

The Bokikokiko is said to speak its name. Or, more aptly, it was named for how it sounds. What I hear mostly is a harsh bo-keet; occasionally a slightly more elaborate bo-keet-eet. When so motivated, a pair will chatter back and forth bo-keet-bo-keet-eet, and so forth, especially in the breeding season. Not exactly bokikokiko, but close enough.

While no bird is unique to Christmas, the Bokikokiko comes close. Sometimes called the Line Islands Warbler, or even more specifically (if inaccurately), the Christmas Island Warbler, it is found nowhere else in the world except Washington Island. It was once found on Fanning Island but disappeared shortly after black rats gained a foothold there. Not only is it found on just two islands in the world, it is the only landbird found on Christmas Island. How its ancestors got here is one of life’s great mysteries. But similar warblers are found on most of the islands in the Pacific, each island or island group having its own variety. Their nearest relatives live in Asia. On islands near the Asian Continent are found warblers that do not look much different from their mainland counterparts. But as one travels farther and farther east out into the Pacific, they appear less and less like the ones on the mainland. The one on Christmas and Washington, in fact, looks quite different from any species on the mainland 9,000 km to the west. It is still a warbler in the genus *Acrocephalus*, but to look as different as it does, it must have been here for many thousands of years, long before the early Polynesian explorers arrived in the region.

OCEAN BUTTERFLY

Te bwebwe ni marawa. “Butterfly of the sea.” The white-throated form of the Polynesian Storm-Petrel is one of the least common and most secretive birds that nest on Christmas Island. It comes to shore at dusk and leaves at dawn. While onshore, it remains hidden in its shallow nesting burrow, usually beneath a clump of grass, on the many protected islets. After the breeding season, it leaves the island altogether and does not

nikiba aika tenaan “warblers” ake a aki rangini kaokoro tarakiia ma mannikiba iaon Atia. Ma ngkana ko a borau raroa nako mainiku, nako nanon te Betebeke, mannikiba aikai a moanna ni kaokoro taraakiia ma ake a reke i Atia. Mannikiba ake a reke iaoni Kiritimati ao Teraina, a bon rangi ni kaokoro taraakiia ma utuia ake a reke i Atia, are e mena 9,000 km mai maeaia. Te mannikiba aio, boni ngaia utun naba te “warbler” are e aranaki naba n utuna ae te “Acrocephalus,” ma ngkai e a bon rangi ni kaokoro taraakin te mannikiba aio, nanona bwa e a kamani mena n taabo aikai irangaa te ririki imwaain rokoia moan aomata n neweaba, ake a mwananga mai iaoni Boreneta.

TE BWEBWE NI MARAWA

“Te Bwebwe ni Marawa,” ke te “Polynesian ke White-throated Storm Petrel” boni ngaia teuana utuni mannikiba ake a karako aekaaio a boni ngaia naba te utu ni mannikiba teuana are e kaabung iaoni Kiritimati ae e rangi ni kaakarabaa kawaina ma aroarona. E roko n te aba ni bungin taai ao e manga kiba nako ngkana e tabwena mainiku. Ngkana e roko iaon te aba, e kaakarabaa ni kena nnena ni kaabung ao e aki rangi n nano. Angiin te tai, ana tabo ni kaabung aio e mena iaan te bariko n uteute n taian atimwakoro ake a uareereke ake a tan. Imwiin ana tai ni kaabung, ao e a kitana te aba n aki manga kaoti ni karokoa te ririki are imwiina. Ai ngaia are e aki rangi ni kakubanako ae ti tabeman aomata aika a ataa te aeka ni mannikiba aio. Aomata ake a bon ataa te mannikiba aio ma anuana bon taan akawa ake aki tootoki n akawa i tinanikun te nama, ao i marawa. Naakai a ataa te mannikiba aio bwa te mannikiba are e roroo ma ni mainaina karana ao e mwamwaie iaon taari! Te mannikiba ae e uareereke ma ni kami-mi aio, iai anuana ae e kikibakiba ma n taabeibeti moa iraua te miita iaon taari imwaain ae e titikurikaaki naba nako aon taari ma rangana ae e karuoi rikaaki. Ngkane, e aki naba tiku raoi iaon taari ma e a tabe ni mwamwaie ma ni waerikiriki iaon taari; a kuri n aki toko waena, ao ni bae ni katebetebei kanana aika manin taari ake a uareereke ni wiina. Imwiini karaoan anne, ao e a boni kibarake naba mai taari ni manga moana naba anuana aio.

Te mannikiba ae te bwebwe ni marawa, e a karako mwaitina ngkai iaon nako aban te aonnaba. E kuneaki ngkoa n aaba aikai mai Vanuatu ni karokoa aban “Marquesas.” Ma imwiini kaainakiia aaba aikai iroiua katamwa, kimoa ao aomata, ao ai akea mannikiba aikai man te aba teuana ma teuana. E a bon reke maiun te mannikiba aio iaoni Kiritimati ibukina bwa n angiin atimwakoro ake a mena iai, akea katamwa iai ma imwiina ao a manga roko kimoa ma aomata. Ma ngkai, e tei n ae e a moanna n aitaro te mannikiba aio ma te kangaanga ae e rangi ni bubura iaoni Kiritimati. E konaa naba n atongaki bwa ngaia naba te karinan ni mannikiba ae e a moanna n akea aekana iaon te aonnaba. Akea raoi ae e atai. Ma ngkana bon te koaua aio, ti te tabo ae e na kona n teimatoa maiuna iai boni Kiritimati. Ibutin teraa? Ibutin bwa Kiritimati ai bon ti ngaia ngkai te kabanea n aba n te aonnaba ae e bon ataaki iai te mannikiba aio bwa ana tabo ni kaabung.

UEANI MARAWA

A rangi n tiraua bwaai aika a kamimi n riki rinanon te kariki bwai – n ai aroia maan aika a kabuebue raraaia, akea buraeia, iai baiia ni uaua ao ma ni mamaeka iaantari ni kabanea aia bong ni maiu; iai naba maan aika a kabuebue raraia ae iai wiia kaanga wiin te take ao ngkana a bung, ao a kabwakabwakai bunnatoia; ao iai naba ika aika a konaa ni ikeike iaon te aba ao ma n nakonako iaon te aba. Ngkana e konaa ni karaoa aio te kariki bwai, ao tao n te taina, ao a na reke aekani mannikiba ake a na konaa ni kabung ma ni kabwakabwaka i taari. Ngkana e na reke te aeka ni mannikiba aio, e na boni bae n riki man te man ae e aranaki bwa te “shearwater!” (tanguioua, tinebu, nna, ruru).

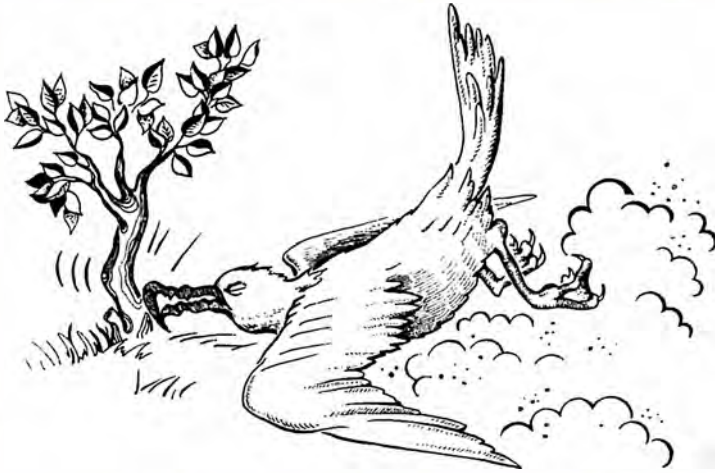
re-appear until the following year. So, it is not surprising that so few people are familiar with it. The ones who do know this bird are the fishermen who venture regularly beyond the lagoons and out to sea. They know it as the little black-and-white bird that dances on the water! This remarkable little bird has a peculiar habit of fluttering and gliding a few meters above the water’s surface, then dropping down with outstretched legs. It does not land on the water but dances and tip-toes along the surface, feet barely touching, picking tiny arthropods from the surface with its bill; then suddenly, it bounds back up away from the water to renew its cycle of alternate fluttering and gliding followed with swoops and patters at the surface.

The Polynesian Storm-Petrel now has a very small worldwide distribution. It was once found on archipelagos from Vanuatu to the Marquesas. But cats and rats and people have invaded most of these islands and together have eliminated this vulnerable species from one island after another. It has survived on Christmas Island only because of the many protected islets free of cats and, until recently, rats and people. Now, this species may also be in serious jeopardy on Christmas Island. It is one of the rarest seabirds on the planet. Christmas Island is its last hope for survival. Why? Because Christmas is the only remaining island in the world where we know it still nests.

MASTERS OF THE SEA

Evolution has produced some extraordinary progeny – hairless mammals with flippers that spend their entire lives underwater; a mammal that has a bill and lays eggs; an air-breathing fish that can walk on land. If evolution can do all this, then perhaps some day we will have birds that can lay their eggs in the sea. Such a bird, if it were ever to arise, would surely be the descendant of a shearwater!

Next time you’re standing at that fragile interface of land and sea shortly after dawn, watch a shearwater as it heads out to sea to feed. A Wedge-tail comes from your left, skims past the last saltbush, over the beach, and out to sea. It is truly in its element. It tacks in the wind with a command and grace that would turn the most seasoned sailor green with envy. Even on the roughest days...no especially on the roughest days, the swells and whitecaps are its ally. On stiff wings it glides just millimeters above the surface, wingtips almost – but never quite – touching the water. Then, just when it looks as if it will surely crash head on into an oncoming swell, it rises abruptly, wings arrow-straight and rigid, soars high above the whitecaps, sets a new course slightly downwind, then, as quickly as it rose from the sea (don’t blink!), it is gone – swallowed in a giant trough. While out of sight, it changes course again, keeping low. Seconds pass. Still in the trough. You anticipate its speed and its course. But did it tack to the left or to the right? If you’re lucky, you will see it again. Only this time, it will be much closer to the horizon, rising in a steep high bank as the wind takes it on another ride over the top and into another trough.



Ngkana arona bwa n te tai ae e na roko ao ko tei n te tabo are imarenan raoi te aba ao taari imwiin tabwenani mainiku, ao boni karekea raoi taraakin te “shearwater” ngkana e nako ni katabea kanana i taari. Mai angamaingim ao e kiba te tanguoua ni kiba riaon te mao ni kaineta taari ni kakaea kanana. E a bon roko raoi n ana marawa. E riaki ni kibakiba i karawa n te aro are e mimitoiaki ao ma ni kamataai nakoia taani borau ake a tataneiai ma marawa. E ngae naba ngkana e buaka karawa, tiaki anne, e na kangai, ni boongi ni buaka ake a rangi ni korakora, ai bon akea maakan taian nao ake a buubura ma ni ngarengare iroun te mannikiba aio. N taai aikai, ao e na boni karaua n tataakini baina ni katikui ma ni beti tabeua te mirimiita iaon taari, a kuri n toko baina ma taari ma a bon aki. Ngkanne, ngkana ti tebo ma e nangi bon untaba ma taian nao ake a buubura, ao e a boni kibarake naba ma ni katikii baina riaoni ngarengaren taian nao. Imwiini kibarakena anne ao e aki rube matam ao e a manga bua naba imarenan naao ake a tootooa. Ngkanne, e a bon aki kona n nooraki bwa are e a boni karaua ni kiba inano. Ko kataia ni katautaua birina ma kawaina. Ma e riaki nakea, nakon te maing ke te atai? Ngkana ko tekeraoi ao ko kona ni manga nooria. Ma ngkanne e a rangi n raroa ni kaan ma te oraitan ao ni manga moana naba aekani kibakibana aio i karawa ao ma ni bakatekea marenan naao ake a buubura.

Ma ai kaokorora anuan te mannikiba aio iaon te aba. Baina ake a ananau ma ni kaairariki ake e a kikibakiba ma ni beti iai riaon taari a boni kakimwaia ngkana e kataia n tiku rikaaki nakon ana tabo ni bung. Angaraoiin tikuna, ti ngkana e a kabanea naba kibamwaakana ni kiba rikaaki. Ngkana e karaurau n tiku ao e a boobukitaua naba. Ai ngaia are e kabanea kibamwaakana n tiku rikaaki, e kabureikia, e orooroi baina ni kabaititiia, e taakinii waena i moana, e buki ao akea bwa e roko n ana tabo. Ibukina bwa rangan ao waen te mannikiba aio a mena mai inano iaon rabwatana, (bwa e aonga ni konaa ni beti i taari ao tiaki ibukin te nakonako!) e a bon aki konaa n tei raoi te mannikiba aio. Ngkanne, n tikuna iaon te aba ao e a rangaranga ma ni kabonganaa rabwatana ni kookookia iai ribuakon taiani kai ma uteute nakoni ngaona. Ikanne, ike e a tiku iai ibukin te tairiki ke te ngaina are e a bon nakon ana tai are e mena iai.

Ngkanne ai bon ti tebo naba anuan te mannikiba aio, ma te tanguoua are te kabanea ni bubura mai ibuakon utun te mannikiba aio, te nna are te kabanea ni uareereke kaanga iterani buburan te tanguoua. Ma n rokoia ni ngaoia ke n aia tabo ni bung, a rangi ni kai kinaaki aekani mannikiba aika aua aikai, man tangitangia, e ngae ngkana e a bong. Taian tanguoua a tatangitang ma n tanginiwenei (kaanga e bon aki kamimi?) ma tangini bwanaaia ae ee nako eta ao ma ni bwaka kaanga ai aron ae a ike rake ao ma ni ike rikaaki. Te tinebu are e uareereke riki ma n roo riki matani konna, e tanginiwenei naba ma e kaokoro tangina. Bwanana teuana, kaanga e tangi mai bwairina ao tangina are teuana, kaanga e tangi ni kakamaaku, n ai aron “uuuuuuuu.....uuuu...”

On land, the story is quite different. The long, thin wings that keep it aloft at sea are its own worst enemy as it tries to land near its nest burrow. A high-speed landing is its only option. Too slow and it will stall out. Apply the brakes. Flap like crazy. Feet outstretched. Thud. Home at last! Because its legs and feet are set far back on its body (an adaptation for swimming, certainly not walking!), it cannot stand upright. It waddles and pushes itself along, using its breast as a skid plate, over, under, and through the vegetation to its burrow. There, it will remain for the night – or day – depending on which shift it is on.

The story is similar, whether it be a Wedge-tailed Shearwater, the largest of the group, an Audubon’s Shearwater, the smallest at about half the size of a Wedge-tail, a Christmas Shearwater, or a Phoenix Petrel. But once at their nest site, the four species can easily be recognized, even at night, by their distinctive calls. Wedge-tails wail and moan (is it any wonder?) with alternating rising and falling sounds as if inhaling and exhaling. The smaller, darker Christmas Shearwater also moans, but with a different quality. One is nasal. Another is an eerie ow-oooooooo ow-oooooooo. The still smaller black-and-white Audubon’s Shearwater emits a series of cat-like howls. The Phoenix Petrel is the most vocal of the lot. It bursts forth with an eerily musical, witch-like cackling and, unlike the others, frequently calls while in flight around the colony. All are silent at sea.

MASTERS OF THE SKY

The frigatebird is another remarkable creature. Frigatebirds glide effortlessly on wings that measure over two meters tip to tip. They can hang motionless in the wind for hours at a time, then dart off with the agility and grace of a falcon after a tern or a booby laden with a fresh catch of fish. As large and seemingly unwieldy as they are, these “flying wings” can turn in an instant. They are quite adept at picking flying fish out of the air without missing a beat as they cruise close to the water’s surface. They can force a booby to disgorge its catch in mid-flight, then swoop down, make a 180 degree turn, and snatch the morsel right out of the air as it plunges toward the earth.

The male frigatebird has an added feature surpassed by few other birds in the world. Most of the year he appears to be all black; but he has a patch of loose, withered red skin on his throat that is usually concealed under black feathers. When it comes time to court a female, he inflates this withered sac like an enormous red balloon! Now, how can any female resist that?

The Great Frigatebird’s nesting season is longer than that of any other bird on Christmas. The male and female take turns sitting on their one small egg for two months before it finally hatches. When the young bird enters the world, it is tiny and featherless. It grows slowly, and is ungainly at first. The nestling frigatebird is as awkward as the adult is graceful. When resting, it sometimes looks dead with its head and bill hanging limply over the edge of the nest. When disturbed from its slumber, it raises its head and sways like a drunken fool, squeals like a pig, and

Ngkanne te nna are te aekaki are e roroo ma ni mainaina ao ma ni uareereke riki nakoia mannikiba aikai, e tang kaanga aekan tangiia katamwa ake a tangi n tatakaurua. Ma te ruru boni ngaia te kabanea ni karongoaa mai ibuakioia mannikiba aikai. Tangina, e tangi ni kaka-maaku, kaanga tangiia anti aika a katake ma ni ngarengare ao anuana teuana ae e kaokoro ma are irouia mannikiba aikai, bwa ni kibakibana ni katobibia taiani mannikiba ao e aki tootoki n tang. Ma i taari, ao a bon aki konaa ni kakarongoa mannikiba aikai ni kabane.

UEANI KARAWA

Te eitei boni ngaia te mannikiba temanna ae e rangi ni kamimi anuana. Taian eitei a taabeibeti i karawa n tataakinii baiia ae e nakon uoua tabun te miita abwakina man taboni baina teuana nakon are teuana. A boni konaa ni beibeiti i karawa n te maan ae iraua te aoa ao imwiina ao a kiba rikaaki naba ni kiba ni bane rereia ma ni katotoonga te "falcon" ni kakioa te "fern" ke te "booby" are iai konana te ika. E ngae ni buburakaei ao ma n tei ni kimwai aekani baiia mannikiba aikai, ma a bon rangi ni kai riaki n te tai ae moan te waekoa. A bon rangin rabwakai ni karekei kanaia onauti ake a kibarake, ma n aki bwerengaki inanoni kibaia ni kaania aon taari. A boni konaa naba n taua "te booby" ma te matoa i karawa bwa e na kabwakai konana ao ngkanne e waekoa naba n riaki ni kiba rikaaki n tikoba te kona are e a bwaka ni kaineta te aba.

Te eitei ae te mwaane boni iai tein rabwatana ae e kuri n aki oreaki nako irouia mannikiba riki n te aonnaba. Angiin te tai n te ririki, ao e bon tei n roroo matani kunna ma iai kunna ae uraura ae e tinetini ni bwarukuruku ian roroana ao n angiin te tai, e raba iaani buraena aika a roroo. N ana tai ni kan iein ma te aine ao e a katibutaua naba te kun ae e tinetini aio, kaanga ai aron te katibu ae e uraura ma n totoakaei! Ai antai ngkanne te aine ae e nang aki bwaka nanona n taraakina?

E rangi n ananau riki ana tai ni kaabung te eitei are e bubura nakoia mannikiba nako iaoni Kiritimati. A bon taatana aia tai n tekateka iaoni bunnatoia ae ti teuana ma ni uareereke, te eitei mwaane ao te eitei aine, inanon te maan ae uoua te namwakaina imwaain raurena. N rokona iaon te aba, te eitei ae e uareereke aio, e uareereke ma n akea buraena. E waeremwe ikawaina ao n te moantai, e rangi n tei ni kimwai. Moan te tei ni kimwai te mannikiba ae uareereke aio e ngae ngkai a rangi n tei n rabwakai ana ikawai. Ngkana e motirawa te mannikiba ae e uareereke aio, ao ai bon ti tebo taraakina ma kaanga e a mate, ma atuna ao wiina n tinetini ni bwaka mai iaoni ngaona. Ngkana e uruaki matuna, e uta atuna, e raraii n ai aron te manging, e karara n aia aron tangin te beeki ao ma n orooro baina ni kakabaitiia. Moan te kamanga taraakina ngkana e karaoa aio. Imwiin aua nakon nimaua te namakaina, ao e a roko abwakini baina n te abwaki are e a konaa ni kiba iai. Ao are e a bon riaki naba ni kiba n te tai aio. Bwa n te tai aei, ao e a uaatao nakotaarina (kuano) inanoni ngaona, kaanga e a roko n te bubua n ranga!

Ngkanne, e ngae ngkana arona bwa e a ewenako te mannikiba ae e uareereke aio, e boni kainanoa naba ana tararua ma ana kaawakin ana karo. Aroni kibakibana i karawa bon te bwai ae e reiakinaki. E rangi ni kabane tai reiakinana ma ni kainanoa te reirei ae e bati. Aio are a boni bubuokia iai ana karo. Imwiin reikinana ni kiba ni kakanikan n aekaia ana karo, ao e a boni koro teuana tabun te ririki imwiin aia tai ni kabwakabwaka ana karo. Ngkanne, ibukina bwa a ti kaabung eitei n tain te kakarau, nanona bwa a na manga taningaa te ririki are imwiina bwa a na manga kabwakabwaka iai.

claps its mandibles together rapidly. This is a truly comical sight! After four to five months, the nestling's wings and flight feathers have grown long enough for it to finally take flight. And not too soon. By now, its nest is covered knee deep in frigatebird guano!

Even after the young bird has fledged, it needs constant parental care and supervision. The frigatebird's mastery of the skies is a learned trait. It takes time and a lot of training. This is where the parents can help. After a few months of training the young bird to fly with the grace of its elders, more than a year has elapsed since the parents last nested. Because frigatebirds only commence nesting in the rainy season, they must now wait until the following year to breed again.

BOOBY RITUALS

Ever wonder where the booby got its name? The dictionary says a booby, or boob, is a stupid or foolish person, a nitwit. Not very flattering. Ever look a booby in the eye? Straight on? There's something about that look that...well, doesn't exactly convey God's gift of avian intelligence. Ever watch two boobies when they get together? If so, you've seen how they prance around in slow motion, nod their heads back and forth, up and down, then abruptly turn their heads away? Fools' folly for sure! But, did you ever stop to wonder what a booby might think if it had the opportunity to observe our ritual displays? Take te rouia. Or even better, Western-style dancing. Now, to a booby, that's folly! It's all a matter of perspective.

Next time you're around a nesting pair of boobies, watch carefully – from a bird's point of view this time. Take a moment to reflect as the male struts around the female nodding its head up and down as if to say "Yes?" The female responds by shaking her head back and forth, "No way!" But then she starts nodding up and down. "Yes!" Back and forth. "No!" Up and forth and back and down. "Yes, no...uh, maybe. I'm so confused!" Suddenly, both birds freeze and gaze into each other's eyes. After a few moments' pause, the two touch open bills together. The male presents the female with a stray feather. Then, without warning, both birds simultaneously throw their heads in the air, bill pointed skyward, and after another brief pause, they abruptly face away from each other, bill against their back. Not much different really from two courting humans when you think about it.



AROA KOOKA

E a tia n riiri am iango bwa e reke mai ia aran te koota? N te tek-itinare, ao te taeka ni matang ae te “booby” ke te “boob” nanona te aomata ae e taribaba ke akea kanoan atuna. Kaanga e aki rangi n anai nano ke. Ko a tia ni bon taraa raii kanoani matan te koota ke ni karaua ni kabwaatia? Ngkana ko a tia ao bon iai taraakini matan te koota ae kaanga e taraa n taribaba ibuakoaia mannikiba. Ko a tia n noriia koota uoman ni kareke tai? Ngkana ko a tia, tao ko a boni bae n tia n noora aroia n nanakonako ni karaurau i boni irouia ma ni katoutoui atuia ao imwiina a boni waekoa naba ni bitii atuia? kaanga te mwaan ni baba ke? Ma ngke ko a tia ni karaua ni iangoia bwa tao tera ana iango te koota ngkana e a matak n aroni kateira? N aekan te rouia. Ke tao ae e tikiraoi riki, te maie ni matang. I taku bwa iroun te koota, kateira akanne bon tenaani mwaan ni baba! E a bon nakon te aomata ke te man aron ana taratara.

Ngkanne, n taai aika a na roko, ngkana ko mena irarikiia koota aika uoman aika a kareketai, ao boni kamwataua taraakia, ao ko kataia n taratara bwa angkoa ngkoe naba temanna te koota. Ao bon taraa te koota mwaane ngkana e katoutoua atuna ni kakatobibia te koota aine, ti tebo ma e kangai nakon te koota aine, Eng ke? Boona ngkanne iroun te koota aine bwa e a ioioa atuna kaanga e kangai “I rawa!” Ma imwiina ao akea bwa e a manga katoutoua atuna kaanga e kangai, “Aia ngai!” E a waaki nako te katoutoua ma te ioio atu aio irouia mannikiba aikai kaanga e kangai te koota aine, “I rawa” ao imwiina tao e a manga kangai, “N na nooria,” ke tao “E a mino atu!” Ma imwiin aio waaki aio, ao akea bwa a ti oki naba koota aikai ma ni kabwaati i boni irouia. Imwiin teutana te tai ao a kaai naba ni kaurei wiia ma ni kabooi wiia aika a ure aikai i bon irouia. Te koota mwaane, e a angan naba ngkanne te koota aine ana baintangira, are te buraeniman teuana. Ngkanne, n akea te kaetieti, ao akea bwa a kaai naba n tannako koota aikai ma ni katararakei atuua nako karawa n tinanikuia i bon irouia ma ni katokai wiia i akuuia. Ngkana ko karaua ni iangoia bon akea kaokoroia ma aomata ake a tibwa kakarekenano.

TAAN TIAKA I KARAWA

Tao ngkana e aranaki te eitei bwa ueani karawa, e na boni bae n arana-ki te mannikiba ae te taake bwa ngai aio boto taan tiaka i karawa. A boni kona ni waakina aio kamataku ae moan te kakamataku i karawa aekani mannikiba aikai. E bane takiakiani mainainani bukiia n tere-nako ni maawawani karawa, e turubaka uraurani wiia man uraura karani bukiia ae e tiki anaana. Ngkana iai te roroo iaoni mataia ao anne ngkanne e bon aranaki bwa te taake. Ao ngkana e karekenano te mannikiba mwaane aio ao te mannikiba aine i karawa, ao ai bon te kanoo teuana ae ko na bon aki kona ni mwaninga.

E taekinaki n taiani boki bwa bon ti te mannikiba ae moan te uareereke ae te “hummingbird” ae e kona ni katatai baina ni kiba, 50 te tai n te teekan, ae e kona ni kiba ni keerikaaki. Ma tao aomata ake a koroi booki akanne, a bon tuai man noora te taake n ana tai ni kamataku. Te mannikiba ae te taake tiaki te mannikiba ae e uareereke. Tinebuna, e nakon 700 grams; anne ae kaanga e bon rangi n tinebu ibukiiia mannikiba. Ao a kuri ni kimototo baina ibukini kibakibana ma rabwatana ae e tinebu anne. Ni moanakin ana kamataku te taanga ni mannikiba, teuana, ao te mannikiba are temanna e kabaititiia naba ni kamwaingingi baina ma n taakini waena ake a bubura ma n nim ngakeia ao bukina are e anaana, e tabe n tinetina ma n ruru. Imwiina, ao ni buokaki n te ang, akea bwa e a reke kibaraken te man-nikiba aio. N te tai naba aio, ao te mannikiba are temanna e a kiba rikaaki naba ma ni kiba nako mooa, ao imwiina e a kibarake naba imatan toana. Ngkanne, e a karaurau ni kibarake ao ma ni kiba ni

AERIAL ACROBATICS

The frigatebird may be the master of the skies, but the tropicbird is surely the master of aerial acrobatics! These birds can really put on a show. Gleaming white against a clear blue sky, they have a blood-red bill at one end and a long red streamer at the other. Add a dash of black through the eye for character and you have a Red-tailed Tropicbird. Mix in a male and a female in the act of courting, and you have an aerial spectacle you won't soon forget!

The books say only the tiny little hummingbird with its 50 wingbeats a second can fly backwards. The people who wrote the books must never have seen a tropicbird in full display. Now, the tropicbird is no small bird. It weighs nearly 700 grams, quite heavy by bird standards. And it has relatively short wings with which to carry that extra weight aloft. To initiate the display, one bird of the pair begins to hover on rapidly beating wings, its prominent webbed feet flared out to the side, tail depressed, with long tail streamer dangling and shaking like a loose appendage. Somehow, the bird manages to get enough lift to carry it up and backward, aided by the ever-present trade winds. At the same time the second bird of the pair swoops down and forward and then up in front of the first bird. It begins to hover up and backward, and their roles are suddenly reversed. After a couple of rounds of this avian Ferris wheel, the two dash off together across the skies, swooping in one direction, then another, in tandem, never more than a meter apart.

All during this acrobatic courtship display the birds call raucously to one another. Actually, raucous is too kind a word. For all their grace and beauty, tropicbirds, without doubt, make the most irritating sound of any bird in the world! The harsh, nerve-rattling A-rack! of their courtship display is their “pleasant” call. At the nest, when one mate comes in to relieve the other, they emit a whole series of loud a-rack! a-rack! a-rack! calls. But if you dare venture too close, the attending bird lets out a blood-curdling squawk that sounds every bit like a giant parrot having its throat slashed!

FEEDING FRENZY

Watch a group of boobies fishing. It's a first class aerial assault. World War II bird style. The fish don't stand a chance. A group of boobies glides by, single file, in formation. Bombers. Fish are spotted just below the surface fleeing from a school of tuna. Ground troops. Innocent victims seeking refuge. Suddenly, the bombers become the bombs. Dagger-like bills on outstretched necks lead the way; their bodies follow, wings half folded. Brown Boobies come in at an angle, Masked and Red-footed in vertical decent. Splash! One by one, they hit the water. For a few seconds they are gone. Then they emerge like corks, one at a time. Instantly, they take flight. Most have a fish. They gobble down their catch without ceremony. Their job is not finished. They wheel around and come in for a second assault. Splash. Splash. Splash. Splash. Splash. Soon, they attract a crowd. Shearwaters come in low and fast. Noddies hover overhead. Frigatebirds, the ultimate warriors, circle higher. They're watching the attackers – a predator's predator. It's now an all out war! Birds against fish. The low-flying shearwaters stall out at high speed and

keerikaaki ao imwiina akea bwa e a manga katotoonga kiban te mannikiba are temanna ao ngaia e a manga katotoonga kiban te mannikiba are raona ao ngaia e a manga katotoonga kibana. Imwiini kibakiba ia n aekan aio iraua te tai, kaanga tein te wiira i karawa, a kiba nako naba mannikiba aika uoman aikai, ni kibakiba ni kamataku i karawa. Inanon kibakibaia ni kangai ao ni kangai i karawa ao raroaia mannikiba aikai i boni irouia, e aki raka iaon teuana te miita.

Inanon aia tai ni karekenano aio ao a bon tangi n tatararua mannikiba aikai i bon irouia. Tao e rangi ni beebetete te taeka ae "tatararua" ibukin kabwarabwarakin tangiia mannikiba aikai. A ngae n rangi n tikiraoi tarakiia ma ni kakanikan aroni kibaia i karawa, bon tenani kabanea ni bwanabuaka mannikiba aikai ibuakoia mannikiba n te aonnaba! Tangiia ae moan te kakunainga ae kaanga e tangi n aekan "A-rakk!" are tagniiia n aia tai ni karekenano, anne bon tangiia ae aia kabanea ni bwanaa raoi. Ngkana e roko te mannikiba temanna nakoni ngaona bwa e na ruamwiin are temanna, a bon tangi n tatararua ni kangai, "A-rake! A-rake! A-rake!" Ma ngkana ko kakan ninikoria ni kaania, e a boni kabanea naba tangimwaakana te mannikiba are e tiku ni ngaona, kaanga ti tebo ma tangin te mannikiba ae te "parrot" ae te kabanea ni bubura, are e a koreaki bibiina!

AIA TAI N AMWARAKE TAIANI MANNIKIBA

Karekea matam ao kamwataua taraakiia tenaani koota n akawa. Kaanga e a boo te buaka i karawa. Ai aekan te Kauoua ni Buaka n te Aonnaba ae a boo ma are ngkai ai bon aia buaka mannikiba. A aki reke aia tai tenaan ika. A kiba n rain i karawa te nanai ni koota, kaanga aekaia wanikiba ni buaka ake a uouoti taiani boom ni boomuia aiaia. Akea bwa a teke n te kai ni kataratara taiani ika ake a kianako i taari ni kakioaki irouia tenaan ati, kaanga aekaia aomata ake a aki ataibwai ake a kakaie nneia ni katantan man tenaani boom. Akea bwa a ti kuba naba n onikaki taraakiia taiani mannikiba aikai ake a kabootauaki bwa aekani wanikiba ni buaka nakon taraakiia taiani boom. A kiba rikaaki ni katerei nako wiia aika waikakang n aekan te biiti ma ni katiki roroaia, ma baiia ae rukumaki i akuia. A kiba rikaaki taiani koota aika a burauni matani kuniia ma moaia ae ti tebo ma iai ingiia ao ma n taakini waeia ake a uraura. Temanna imwiin temanna, a toko ma taari. Ma bon ti inanon iraua te teekan. Ngkanne a manga otirake temanna imwiin temanna kaanga taian ito ake a bwaka ma n teberake mai inanon te ran. N otirakeia anne, ao a bon ti kibarake naba nako karawa. N te tai aio, ao angiiia koota aikai e a reke konaia te ika are a boni kabwautia naba n te tai naba anne. Ma e tuai toki ikanne aia mwakuri. A manga kiba n riaki ni katobibi ni katauraia imwaaani waakinan aekan akawaaia riki aio. Akea bwa e a rebwetata aon taari ao a roko tenan nanai ni mannikiba. A kabanea kibamwakaia ni kiba n roko, ni kiba inano taian "shearwater." A kibakiba ni kaantaninga i karawa taian io. A kibakiba mai ietaia ni kakatoobibi taian eitei ake a ataaki bwa tenaani kabanea ni ioawawa mai ibuakoia mannikiba. Eitei aikai ake a tabe n taakirooa aron akawaaia mannikiba aikai ao a bon aitaru kaakang ma kaakang. Akea bwa e a boni boo raoi te buaka! A bon aianaki ika irouia mannikiba. Tenaan 'shearwaters' ake a kiba inano, a kabanea naba kibamwakaia nako aontari. Ai bon tekebuakara naba te riro are e reke irouia. N rekeni konaia aio irouia, a bane tatani baiia ni manga karekea kibaia. A kiba rikaaki ngkanne taian io ma ni karaurau n titiku rikaaki ma ni katebetei konaia ao ma n tararuai raoi waeia bwa a na aki mwaimwai. A boni kabauti naba konaia n aekaia mannikiba ake niki-rana. Ngkanne mani nneia i rabaraba-ni-karawa a karauia ni matakukiniia taian eitei. Akea bwa e a kua n tataninga te eitei are temanna ai ngaia are e a ti kakioa naba te koota are e a rangi ni kookona. E a boo te ikakae i karawa. E iakaka te koota. E riaki nakoni maingina ao manga ataiana. E keerikaaki. Ma te eitei are e bubura riki e rimwiina n te raroa ae e kaaniia te miita, e a bon iriria naba. Ibukina bwa e a onrake n te ika te koota, e aki kona n tekana kibamwakan te



instantly crash into the water just a few centimeters beneath them. With only their heads penetrating the surface, they grab a luckless squid. Prey in beak, they patter furiously while pounding the water with their beating wings until they become airborne again. Noddies drop daintily from the sky and pick at the surface, never getting their feet wet. Like the others, they swallow their catch quickly. The frigatebirds watch closely from their lofty post. One grows impatient and goes after a booby that has had three or four successful catches. A hot pursuit unfolds. The booby screams. It turns to the left, then to the right. It doubles back. The larger frigatebird, barely a meter behind, matches its every move as if it were attached by an invisible string. It grabs at the booby's tail. Full of fish, the booby is not quick enough to shake the frigatebird. In an attempt to lighten its load, it disgorges its meal. In a flash, the meal is in the beak of the frigatebird. Aerial transfer. The booby and the frigate part ways. The booby rejoins its squadron.

WITLESS WONDERS?

Noddy (n). Simpleton; fool. *Anous stolidus* (Latin). Slow of mind; without understanding; witless; silly. These are the monikers so unjustly applied to noddies by 19th Century sailors. Because they did not fly away at the sailors' approach, noddies were seen as simpletons. The sailors came from Europe where any bird in its "right mind" would dart off at the mere glimpse of a human approaching too closely. Wise decision, that. For centuries, Europeans had slain the birds. For food. For sport. For pleasure. For no reason at all. Flying away became a means of survival. Any bird that did not fly away was a fool, indeed. But noddies aren't found in Europe; and sailors never ventured where there were noddies – that is, until the latest technological advances in shipbuilding and navigation skills allowed such travel. European man had never seen the likes of noddies, and noddies had never seen the likes of the Europeans. In the 19th Century that all changed.

Coincidentally, noddies also nod. But this is not how they got their name. It was not until later, when the sailors paused long enough in their plunder to observe, that they noticed this mutual nodding display. Nodding, it turns out, is part of their courtship ritual.

eitei ai ngaia are e a kanakoi naba mwiini kanana bwa e aonga ni beebete riki ni birinako mai iroun te eitei. Akea bwa n te miniti naba anne ao e a reke naba kanoani wiina anne bwa kanan te eitei are e a bon anaia i karawa. E a maenako te eitei ma te koota ao e a manga nako n okira ana nanai ni koota.

TAIANI KAMIMI AIKA AKEA AIA IANGO

Te noody (te io) (te nauna). Nanona te buraareei; te baba. Man te taeka n Ratine ae 'Anous stolidus.' Are nanona bwa te anua ni baba, akea te wanawanana; te taribaba. Ao taeka akanne ake ai bon taekan te aeka ni mannikiba aio irouia kaimoa ake taani borau n te ka-19 n tienture. Taeka aikai ake bon akea etiia. E a reke aekan araia aikai kiona ngke a aki kiba nako mannikiba aikai n rokoa kaimoa ni kania. Kaimoa aikai, a roko mai iaon Eurobe ike a tataneiai mannikiba n aaba akanne ni kiba nako ngkana a kaaniaki irouia aomata. Ngkana e kiba nako te mannikiba ao nanona bwa e wanawana te mannikiba anne kiona bwa e aki tootoki n titiringaki irouia kaain Eurobe inanon tienture aika a mwaiti. A riki n tiringaki mannikiba akanne ibukin te amwarake, te takakaro, te kaakibotu, ke n tabetai ao ai bon akea bukin tiringakiia. Ai ngaia are, a na riai ni kiba nako mannikiba aikai bwa e aonga n reke maiuia. Ngkana e aki kiba nako te mannikiba, e a boni kaota babana. Ma aekani mannikiba ae taian io akea i Eurobe ao kaimoa aikai a tuai man rooroko n taabo ake iai iai tenaan io. Ai bon tibwa ngke a bwakuaku taani kaba kaibuke ma taani borau are e a reke iai rokoa kaimoa aikai n taabo aikai. N taai akekei ao te aomata e tuai n nonoora te aekani mannikiba ae te io ao ai uana naba ma te io ae e tuai n nonoora te aomata ma e a bitaki aio n te ka-19 n tienture.

Ma te kangare teuana bwa taiani mannikiba aika tenaan iio, boni mannikiba aika a aki toki ni katoutoui atuia. Ma e aki reke araia man anuaia ae te katou atu. Ai bon tibwa rimwi riki, ngke e reke aia tai n toki teutana man aia waaki n tiriman are a nooria kaimoa anuaia mannikiba aikai ae te katou atu. Ngaia anuaia aio bon aia waaki ni kakarekenano.

E kangai ngkanne aron aia karekenano aekani mannikiba aikai. Te moani bwai ae e na riki iroun te io mwaane ao te io are raona a na kaai ni kibarake nako aan nang ao imwiina a karaurau ni kaai n tiku rikaaki. N tikua iaontano, e a tei ni katika buraeni bukina ni kateiruru nako karawa te io mwaane ma ni katoutoua atuna ao ma ni kau-reurea wiina ao ni kaakainna. Imwiina ao e a kabwaoua naba atuna iraua te tai ao e bobaraaki naba n tarai taboniwaena. N te tai aio ao e a reke nanon te io aine irouna ao e a tanaki naba ngkanne ni katebetebea wiin te io mwaane. Ngkanne ao e a euta naba atuna te io mwaane ma ni kaurea wiina ni kaota karan nanoni wiina ae e aoranti. Imwiin aio ao are e a katika naba roroana ma ni kabobaraaka atuna ma wiina are e bane urena. Ngkanne, are ai boni karokoroaon ana karekenano aio bwa e a bon kannaa naba kanana are e a tia ni kanna, ao aio are e a bon kanna raona! Imwiin aia waaki aio ao e tanaki ni kakatikiraioia iboni irouia are nanona bwa te io aine e a kakatebetebea buraen te io mwaane ao ai uana naba ma te io mwaane nakon te io aine. E a roko n tokina aia karekenano ngkana a kaai n tararake nako karawa ma n tang ni kaanga tangin te bwai ae e rebwetata. Ao anne ai bon te tangira!

TE MWAAN N TIAKA AE E KAMIMI

Ngkana baaba iio, ao matawa a bon taribaba riki. A bon aki kani kiba nako mai iroun te aomata are e ninia aia tabo ma a boni kiba nakoina. Ko aki kona n nakonako ribuakoaia n aia tabo i Kiritimati ao ma n aki tirobabaeaki irouia aia koraki aika a mwaiti ma ni matatokatoka. Ni bon arona ao a iriiriko ma n rangi ni kaani ma ngkoe n te aro are ngkana ko bairekereke ao taraakina bwa ko na kai rawea temanna mai ibuakoaia! Ma teia kaanga ti te tamnei ma tiaki are bon rabwatan

A typical Noddy courtship may go something like this. First, a male and his prospective mate fly higher and higher into the sky, then descend in tandem in a slow downward glide. Once they have landed, the male attracts the female by moving his head back and forth with his bill alternately closing and opening, all the while keeping his tail cocked straight up. Then he nods his head up and down a few times, pauses and stares down at his feet. The female, whose interest is now aroused, begins pecking at the male's bill. The male raises his head and opens his bill, exposing a bright orange mouth lining. He then raises his neck while at the same time lowering his head and wide-open bill. For the *coupe de grâce*, he regurgitates his last meal, which the female enthusiastically eats! All of this is followed by a bout of allopreening – that is, the two birds mutually preen each other's feathers with their bills. The ritual ends when both birds point their bills skyward and make a strange rattling noise. Now, that's love!



A REMARKABLE BALANCING ACT

If noddies are fools, White Terns are bigger fools! They not only don't fly away, they fly toward the intruding human. You simply cannot walk through a bird colony at Christmas without being closely scrutinized by a bevy of inquisitive White Terns. In fact, they follow so temptingly close that, if you're quick enough, it seems you could snatch one right out of the air! But they are more like an apparition, than a real bird. All white but for two beady black eyes and an oddly shaped black-and-blue bill, they remain as elusive as a cloud, always just beyond reach, delicately balancing on the wind.

But that is not its only balancing act. It is the only bird in the world that lays its egg on the bare branch of a tree. Other birds build at least some semblance of a nest – a few strategically placed twigs, some grass, a little seaweed. The White Tern does none of this. It finds a secure horizontal branch with a flat surface, or a slight depression where two or more branches join,

te mannikiba. E mainaina rabwatana ma matana uoua aika kaanga moromoro aika a roroo ao wiina ae taraa n teibuaka ma n roo maawa, ma a kangaanga raweaiia bwa kaanga ai aron te nang are e raroa rekena, inanon aia tai ni mwamwaie n irira unin te ang.

Ma tiaki ti anne ana mwaan. Bon ti ngaia te aeka ni mannikiba n te aonnaba ae e kabwaka bunnatoina iaroni mwaangan te kai. Irouia mannikiba tabeman a karaoa ae kaanga te ngao tabeua makoron tabonongaonga aika a karauaki raoni ni katokaaki, tabeua te uteute ma te tiwiita. E aki karao ngao n aron aei te matawa. E kakaeta te mwaanga ae e weneraoni ma n raababa aona, ke te tabo ae mwanono i mwanokani mwaanga uoua ke a mwaiti riki ao e a katuka bunnatoina ikanne iaon te mwaanga. E a tiku naba ikanne te bunnatoni ni karokoa raurena. Ao ikanne are e a tiku n ikawairake te man anne ni karokoa are e a kona ni kiba. Ibukini kaawakinana man te bwaka ai moara riki inanon tabebong imwiin raurena ao te bun ni matawa aio a bon toamau raoni waena ma ukiniwaena n te tai are e raure iai.

Ma uringnga bwa tiaki te baba te matawa. E ataa te tai are e na angaraoni ibukina. Ngkana a aki kabwakabwaka iio ao a boni bae ni kakaai ngaioia. Kakoauaa n te tamnei are n iteraniba 45!

N TIKU N OKORO I BON IROUNA

Akea n te aonnaba aio ae e roko ni kamimia taiani keeu i Kiritimati. Iroun te aomata are e aki taneia ma te aeka ni kamimi aei ao e na boni kubatera n noorakini mannikiba aika a mwaitikurikuri ni kiba n te tai ae ti teuana ietan te aba. E katautauaki ngkoa bwa e raka iaon 25 te mirion mwaitiia ni bane mannikiba aikai ao iteran te mwaiti aio ae a nonooraki n aia tai ni kabwakabwaka ake uatai ake a bon ataki iai. Ti tabeman naba aomata ake a kona n reke otaia n te aeka ni mwaiti ae e rangi ni bubura n aron aei! Ngkai kaanga e a kangaanga noorakin te aeka ni mwaiti ae e bubura n aron aei iaoni Kiritimati ao a boni bobootaki naba uatai n te ririki imarenan Aeon Field ao South-east Point te mwaiti ae iraua ma iraua teubua ni nga ao 100,000 te kakaai uoman aika a kabwakabwaka uatai n te ririki iaon Cook Island. A karako mwaitiia ake a kabwakabwaka ni kaan ma Kaben Kuka Outero ao n te keeke (benintura) naba are i Bariti. A bon nako mwini kabuanibwai ake a riki n te riko bunnatoni ma bunniman ake a uareereke irouia katamwa ma kimoa. Ngkana a waakinako mwakuri aikai n aki totokoaki ao tokina bwa a nangi bon akea keeu n roko. Ngkana a totokoaki ao a na manga rikirake ni mwaiti n te aro are a na raka iaon te mwaiti ae 10 te mirion ke tao 20. E na teimatoa ke e kangaa nooran te kamimii aio ni bonota karawa ietani Kiritimati? E kantaningaaki bwa e na boni bae ni iai temanna mai ibuakoa taan newe-aba are e na bon roko ni kakoauaa te kamimi aei ao n okirikaaki ni kaongoraia raaraona.

Te keeu, tiaki n are ti ngaia te kabanea ni mwaiti ni mannikiba n te aonnaba ma bon iai naba kamimiina teuana. A kona ni kiba ake ataei inanon ae nakon wanua te ririki ma ni bon aki tiku iaon tano. Ngkanne e na kangaa n ataki aio? Ti atai bwa akea ae e kona ni kabanea wanua te ririki ni maiuna ni irira te keeu ti ibukini kakoauaan te rongorongo aio. Ma ngkana ko karaua raoni ni iangoia ao e na bon anganiko te reke aio. Tarai koaua aikai: keeu a aki kona n uaua. N te tai are a beti iai iaon te ran ao a mara naba buraeia ni wae-tata ao a na aki kona ngkanne ni maan ni beibeti. A rabakau ni kiba mannikiba ake a uareereke ngke tao tenua nakon aua aia namwakaina; imwiina a kiba nako naba nako marawa. A aki manga nooraki ni kaani ma te aba ni karokoa a roko n te roroo ni ikawai n aia ka-6 ke aia ka-8 n ririki. Ao iririkin okiran te aba irouia inanon te tai ae e maan, ibukin te kabwakabwaka, a manga boni kibakiba naba nningaina ao ni bong inanon teuana te namwakaina ke e nako riki ni

and lays its egg right on the branch! There the egg sits until the young bird hatches. And there the young bird sits until it is old enough to fly. To protect itself from falling off, especially in the first few days of its life, the young White Tern has unusually well developed feet and claws at hatching.

But, alas, the White Tern is no fool. It knows an opportunity when it sees it. When Black Noddies are not nesting, their nests do not always remain idle. Witness the picture on page 45!

IN A CLASS OF ITS OWN

The spectacle of Sooty Terns at Christmas is matched nowhere else in the world. For a person who has not grown up amidst this spectacle, the sight of a million birds in the air at one time is an awesome scene! The total island population was once estimated at more than 25 million birds, with half that number present in each of two distinct breeding seasons. Few people can even comprehend a number so large! While it may no longer be possible to see such large numbers at Christmas, several hundred thousand, perhaps close to a million, still congregate twice a year between Aeon Field and South-east Point, and 100,000 pairs still nest twice a year on Cook Island. Smaller colonies nest near the Captain Cook Hotel and on the Paris Peninsula. The combined pressures of egg-collecting by humans, and decimation of their eggs and young by cats and rats have taken their toll. If these practices continue unchecked, eventually the Sooties will come no more. If curtailed, their numbers will again surpass the 10 million mark, maybe even 20. Will this breathtaking avian spectacle ever again fill the skies above Christmas? Many a tourist would surely come to witness it – and go home to tell his friends.

The Sooty Tern may not only be one of the world's most abundant species, it is unique in another way. Young birds may fly for up to eight years without ever landing! Now, how could anyone possibly know this? No, no one has devoted eight years of their life to following a Sooty Tern just to verify the authenticity of this statement. But a little deductive reasoning leads one inescapably to this conclusion. Consider the following: Sooty Terns cannot swim. Once on the water, their feathers quickly become soaked, and they cannot remain afloat. Young birds master the art of flying at about three to four months; then they head out to sea. They are not seen again near land until they reach breeding age in their 6th to 8th year. And even after returning to land to breed after all this time, they fly around day and night for a month or so until all the birds in the colony have returned. Only then do they come to earth to court and nest! All other seabirds rest, at least occasionally, on the ocean surface or never venture so far from land that they cannot return at night to rest.

THE GREAT NAVIGATORS

Not every bird on Christmas Island nests here. Some fly thousands of kilometers across the open ocean from arctic Alaskan and Siberian nesting grounds to spend their non-breeding days on Equatorial islands. How they can find a tiny speck of land in such a vast ocean

karokoa okiia ni kabane kaain te botaki anne. N te tai anne are a tikubara iai ibukin te karekenano ma te kabwakabwaka. A bon reke aiatai aeka ni mannikiba ake te korakina ni motirawa n tabetai ni beibeti iaontari ke a bon aki rangi ni kararoaia ma te aba, rimwi e aki reke kawaia n okira nnea n te bong.

TAANI BORAU AIKA ATOATONGAKI

E aki bung te mannikiba ni kabane are e nooraki i Kiritimati n te aba aio. Iai tabeman ake a kiba man aia tabo ni bung iraua te ngaa te kiromita iaoni marawa man taabo aika a kamwaitoro i Aratika ma Tiberia ni kawarii aaba n te ekuetoa. Bon te karaki teuana taekani karekean abaia ae te bwai ae bingiingi taraana inanoni marawa ae moan te raababa. A kaokoro mannikiba ma aomata bwa iai aia bwaini borau ae te GPS ni kaburoroia! A kabongana taai ma itoi ibukini karekeani kawaia ao akea naba aia kangaanga ngkana e uananginang karawa, ke n tain te maabubu ae e korakora. E nooraki naba imwiini kakaae ni bon taai naba aikai bwa a kona n namakina itin aonnaba n aron are a mwakuri iai kambwati. E aki kan rotaki naba rabakauia ni borau irouia taani borau ake atongatongaki ngkoangkoa mai Mwaikoronetia!

Aekaki ni mannikiba ake a aki toki n nonooraki ni kawara Kiritimati bwa te kun, te kiriri ao te kewe. A bane ni mena n te botaki ni mannikiba are e aranaki bwa taan nakonako i mataniwiin taari. A kiba n aron te keeu n aki motirawa iaontari mai Aratika ni karokoa Kiritimati n aki tikutiku. Tabeman mai ibuakoia a tekeraoi bwa e reke motirawaia teutana i Awai n akea aia "visa"!

Temanna ae e rangi ni kinaaki mai ibuakoia taan roko man taabo ake a kamaitorotoro, bon te kun are e aki toki n nonooraki ni kangi mwanai ake a mate irarikin te kawai. E aki toki n nonooraki naba te kiriri ma te kewe ni kakaai kanaia i mataniwiin taian nama.

Te kewe boni ngaia temanna mai ibuakoia mannikiban Kiritimati ae iai kamimiiia. E bung n te tabo ae e uareereke i nukan Aratika ao e kiba nakon ti tabeua aaba i nukan te Betebeke. Botani mwaitiia ni kabane n te aonnaba, ti tabeua te ngaa ao Kiritimati boni ngaia teuana mai ibuakon aaba aikai are a kona n nooraki iai mannikiba aikai, (anne naba bukina teuana are a roko iai i Kiritimati taani matakukiniia mannikiba!).

is a story unto itself. Unlike humans, birds have something akin to a global positioning system or GPS built right into their brains! They use the sun and the stars to find their way, but they do just about as well under cloudy skies, and even in fog. Recent studies have shown that they can actually detect the Earth's electromagnetic field, which is what makes compasses work. Even the famous Micronesian and Polynesian navigators of yore never came close to matching the navigational skills of migratory birds!

The three most frequently seen migratory birds on Christmas Island are the Pacific Golden-Plover, the Wandering Tattler, and the Bristle-thighed Curlew. All are in the group of birds called shorebirds or waders. Since, like the Sooty Tern, they do not land on the water, they must fly all the way from Alaska to Christmas Island non-stop. A lucky few, however, stop for R&R in Hawai'i along the way (they don't even need a visa!). The golden-plover is the most common of these Arctic visitors, and is often seen feeding on dead crabs on the road. The tattler is almost always seen around the edges of the lagoons, as is the curlew.

The Bristle-thighed Curlew is one of Christmas Island's special birds. It nests only in a small area of interior Alaska and migrates to just a few islands in the Central Pacific. Its total world population is only about 6,000 birds, and Christmas Island is one of the best places to see this species (yet another reason for birdwatchers to come to Christmas Island!).



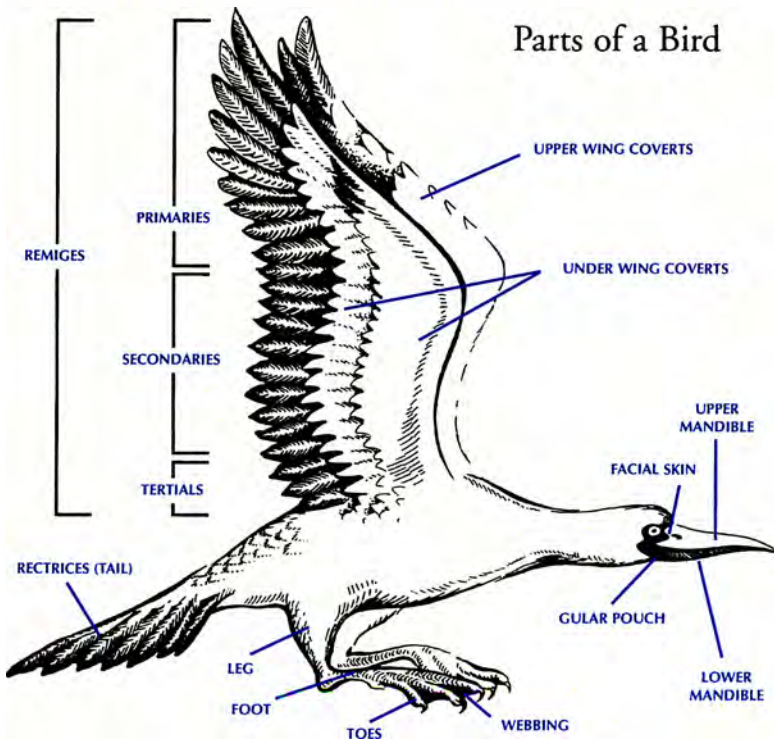
Utua Mannikiba

SPECIES ACCOUNTS

BAAIREAIA MANNIKIBA

Te kabanea n riettaata ni karinaniia maan bon te Kingtam (Kingdom), n te keiti aio bon te Kingtam ibukiia Maan. E tibwaaki te kingtam nakon taiani Bwaaira (Phyla) (Bwaairam [Phylum]) ngkana teuana. A mena n te Bwaairam ae Kotaata (Phylum Chordata). Aomata, ika, maan ake iai riin nukaia ao ai taiani mannikiba. A manga bootaki n te Kiraati (Class) ae Aweti (Class Aves) mannikiba nako. Te bootaki are iaan te Kiraati bon te Ota (Order). Inanon te Ota ao iai teuana ke a mwaiiti riki Utu (Families), ao inanon Utu iai teuana ke a mwaiiti riki Tienera (Genera) ngkana e mwaiiti ao ngkana teuana Tiinati (Genus) ao inanon te Tiinati, teuana ke a mwaiiti riki bootaki aika Tibiitiiti (Species). A kabonganaaki taeka n Ratine aika uoua ibukin aran te Tibiitiiti. Te moan taeka e kaota ana Tiinati ao e bubura koreani moani manna n taainako. Te kauoua bon ana tibiitiiti ao e koreaki n uareereke n taainako.

Mwaiitin te tibiitiiti ni mannikiba ake a kabwakabwaka iaoni Kiritimati a kurubunaki nakon aua te ota ao itua taian utu. Iai uoua te utu ni mannikiba n raka iaoni Kiritimati aika iai naba aekaia ikanne, ma bon ti irua ao a aki kabwakabwaka iaon te aba. Ni ikotaki ma aio, iai riki uoua te ota ni mannikiba ae kaka teuana utuna ake a riki n roko bwa a uotaki irouia aomata ao bootaia ni kabane bwa iai tebwi ma teuana utu ni mannikiba ake a manga kurubunaki nakon onoua taian ota iaoni Kiritimati. A oti inano kabwarabwara aika uareereke ibukin taian ota ma utu ni mannikiba iaoni Kiritimati.



Parts of a Bird

AVIAN TAXONOMY

The highest grouping of organisms is the Kingdom, in this case the Animal Kingdom. The animal kingdom is comprised of Phyla (singular form is Phylum). Birds are in the Phylum Chordata, as are humans, fishes, and other animals with backbones. Birds are grouped together in the Class Aves. The taxonomic level just below Class is called the Order. Within each Order are one or more Families, within each Family are one or more Genera (plural), and within each Genus are one or more Species. The scientific name of a species consists of two words. The first word is the genus, and it is always capitalized. The second is the species, and it is never capitalized. The Sooty Tern, for example, is classified as follows:

KINGDOM: Animal

PHYLUM: Chordata

CLASS: Aves

ORDER: Charadriiformes

FAMILY: Laridae

GENUS: Sterna

SPECIES: fuscata

The nineteen species of birds that breed on Christmas Island are grouped into four orders and seven families. Two additional families have several representatives on Christmas Island, but they are visitors and do not breed on the island. Add to this, two more orders (with one family in each) that have been introduced by man to the island, and we have eleven families of birds grouped into six orders represented on Christmas Island. Below are brief descriptions of the orders and families of birds on Christmas Island.

OTA: *Procellariiformes***MANNIKIBA N TAARI AKE IAI KAIN AONI BWAIRIIA**

Mannikiba ake iai kain aoni bwairiia a mena bwangabwangani bwairiia i tabon te kai ae e uareereke ae e mena iaoni bwairiia, ao e bwaka nako naano, n ai aron te matau, taboni wiia. Angiia, a bane aia tai i taari n ti okioki ni kaeii aia tabo ni matu iaon te aba. Aekani waeia, kaka tenua taboni waeia ae a kaai n nim ngakeia. Ni kabane mannikiba ake iai kain aoni bwairiia a konaa n nima taari kioina ngkai boni iai te bwai ae e bubura ae e mena i atuia ae e anaa te taoro man taari ma ni kanakoa mani bwangabwangani bwairiia.

UTUNI MANNIKIBA AIKA TENAAN TANGIUOUA, TE TINEBU, TE NNA MA TE RURU AO TE BWEBWE NI MARAWA (Utu: Procellariidae). Iai baiia aika a irariki ma n anaanau ake a aki toki ni kaakatikii ma n taakinii n eti ruru inanoni kibakibaia. Angiia a mata roo karaia ke a bon rooro ao tabeman mai ibuakoa a mainaina aani bwabwaia. Iai aua aekani mannikiba aikai ake a kabwakabwaka iaoni Kiritimati ao iai riki nanai tabeua ake a konaa n nooraki i nanoni marawa n raroa ma te aba, ma mannikiba aikai a kabwakabwaka n aban riki te Betebeke ake tabeua, ma tiaki Kiritimati.

TE UTU NI MANNIKIBA AE TE BWEBWE NI MARAWA

(Utu: Hydrobatidae). E uareereke riki nakon utun te "Procellariidae" ao a aki rangi n abwaabwaki ke a aki roko n abwakini baiia kaain te ota ni mannikiba aei ao a aki roko naba n abwakin baiia kaain te Ota ke kaanga a kuri n taraaki ni mron aoni baiia. A ananau riki rangaia ma ni uareereke riki wiia. A ewa mai ibuakoa ae iai te bwai ae e mainaina iaoni bukiia ao iai tabeman, n aekan ake iaoni Kiritimati, ake iai naba te mainaina ni buraeia. Te mannikiba ae te Bwebwe ni Marawa bon ti ngaia aekan utuna iaoni Kiritimati e bukinaki ngkoa bwa uaeakaki aekana. Te Bwebwe ni Marawa e roo rabwatana ni kabane, aekana are teuana are e aranaki bwa te White Throated Storm Petrel, e mainaina rooroana, bwabwaana, birotona, aani baina ao aoni bukina. Aekani mannikiba aikai a kuneaki n atimwakoro tabeua, ma ngkai e a kakoouaaki bwa e ngae ngke e kaokoro karaia mannikiba aikai, bon ti te kara ae e kaokoro ma tiaki nanona bwa a kakaokoro aekan nanaini mannikiba aikai. Mannikiba ake iaoni Kiritimat a kaan riki aia kara ma te mainaina (white-throated morph)

OTA: *Pelecaniformes***TE TAAKE. TE MOUAKENA. TE KIBWI.
TE KOOTA AO TE EITEI**

Te ota ni mannikiba ae e bubura aio, ae a reke naba iai tenaanii "pelicans," "cormorants (ke shags)" ao "antinga" ? a ewa aekaiia n te aonnaba ni kabuta. A kinaaki mannikiba aikai bwa kaka aua taboni waeia ae e toma ngakeia. Ni kabane mannikiba a bane ni iai te kun ae kaanga te buua (gular pouch) ae e mena iaani wiia are e kabonganaaki bwa nnei kanaia n te tai ae e uareereke (pelicans ao cormorants) are e mena iaani wiia are e kabonganaaki n te tai ni karekenano (eitei). Ti te taake ae akea te aeka ni bwai aio irouna. Irouia mannikiba aika te mouakena, te kibwi, ao te koota iai naba te aekani bwai aio ma bon akea uaana irouia.

TE TAAKE (Utu: Phaethontidae) e kuri ni kangaanga iangoana bwa kaain te ota ni mannikiba raa ae e na mena iai ma e a karinaki n te ota ae te Pelecaniformes" ibukina bwa a toma naba ngakeni waena ake aua. Iai kaokoroia ma mannikiba n te karinan aio ibukina bwa akea kunin rooroaia ke te buua are e mena iaani wiia (gular pouch) ao iai buraeia natiia ngkana a raure. Angiia taian taake a mainaina, iai buraeini bukiia ae e rangi n ananau ao e tokatoka karani wiia. Bon ti tenua aekan tibitiiti n te taake n te aonnaba, teuana mai ibuakoa ae e reke iaoni Kiritimati.

ORDER: *Procellariiformes***TUBE-NOSED SEABIRDS**

Tube-nosed birds have their nostrils at the end of a short tube on the top of the bill, and the tip of their bill is hooked. Nearly all spend most of their lives out at sea, coming ashore only to nest. They have three webbed toes. All tube-nosed birds can drink salt water because they have a large gland in their head that concentrates salt from the water, which is then excreted through the nostrils.

SHEARWATERS AND PETRELS (Family: Procellariidae) have long, narrow wings which are held stiff and stretched straight out when flying. Most are dark sooty brown or blackish, and some have white underneath. Four species nest on Christmas Island, and several more can be seen at sea far offshore, but they nest on other islands in the Pacific, not on Christmas Island.

STORM-PETRELS (Family: Hydrobatidae) are smaller than the former, and have shorter, more rounded wings. They also have longer legs and a shorter bill. Many have a large white patch at the base of their tail, and some, like the one on Christmas Island, have other white patches in their plumage as well. The Polynesian Storm-Petrel, which is the only storm-petrel on Christmas Island, was once thought to be two species. One (the Polynesian Storm-Petrel in the narrow sense) is all dark; the other (the "White-throated" Storm-Petrel) has a white throat, lower breast and belly, underwing coverts, and rump patch; but both forms, as well as intermediates, are found on some islands, and it is now believed that these plumage differences represent color morphs, not different species. Those on Christmas Island are closest to the White-throated morph.

ORDER: *Pelecaniformes***TROPICBIRDS, BOOBIES & FRIGATEBIRDS**

This large order of birds, which also includes pelicans, cormorants (or shags), and anhingas, has representatives throughout the world. They are characterized by having four toes with webbing between each. All but the tropicbirds have a loose flap of skin called a gular pouch at the base of their bill that may be used to temporarily store food (pelicans and cormorants) or in courtship display (frigatebirds). The boobies have only a small patch that has no obvious function.

TROPICBIRDS (Family: Phaethontidae) do not fit easily into any bird order but are placed in the Pelecaniformes because they have webbing between all four toes. Unlike others in this order, they do not have a gular pouch and their young are feathered when they hatch. Tropicbirds are mostly white and have long tail streamers and a brightly colored bill. There are only three species in the world; one of which is found on Christmas Island.

BOOBIES (Family: Sulidae) do not have nostrils that open to the outside like most other birds. Therefore, they have to breathe through their mouth. They have long pointed wings, a straight, pointed bill, and a pointed wedge-shaped tail (think of them as being pointed at all four corners). All species have brightly colored facial skin which probably functions to attract a mate in courtship and in species recognition. Of the nine species worldwide, four are found on Christmas Island.

TE MOUAKENA, TE KIBWI AO TE KOOKA (Utu: Sulidae), akea bwangabwangani bwairia ae e uki nako tinaniku n aekaia angia mannikiba. Ai ngaia are a boni ikeike mai wiia. Ngkana ko iangoa taraakia aekaki ni mannikiba aikai, ao katea tamneia i matam bwa iai aua aia koonaa aia a waikakang, a ananau ma ni waikakang baiia, a waikakang wiia ao a waikakang bukiia. Ni kabane tibiitiiti ni mannikiba aikai a tokatoka karani kunin moaia bwa tao kaanga aia bwai ni kabwakabwaka mannikiba aikai inanon aia tai ni karekenano ao are e boni kabonganaaki naba bwa te anga ni kikina bwa te aekara te tibiitiiti ni mannikiba anne. Mai i buakoia tibiitiiti aia ruaiwa n te aonnaba ni kabuta, ao aua mai ibuakoia aikai a reke iaoni Kiritimati.

TAJAN EITEI (Utu: Fregatidae) a rangi n ananau baia, a ananau mani baoua, a anaanau ma ni bwaoua rikaaki wiia ao a anaanau ma ni manga bukina. Iai ngkanne te buua are e mena iaani wiin te mannikiba aio (gular pouch) ao te buua aio are e kona ni katibutauaaki nakon te bwai ae e bubura ao e takauraura karana. N ana tai ni karekenano te mannikiba aio, ao e a katibutauaa naba te bwai aio kaanga n ai aron te katibu, ao buburana e nakon ae e kaan iterani buburan rabwatana. A rangi ni ioawa aekani mannikiba aikai nakoia mannikiba ake te korakina ao anuaia teuana bwa a kona n tauia mannikiba ake te korakina ma te ioawa bwa a na nnai kanaia ao ngaiia a kang naba. Nimaua aekan ana tibiitiiti ao uoua mai ibuakoia a mena iaoni Kiritimati.

OTA: Charadriiformes

TE KUN, "SANDPIPERS", AO TE KARAKARA, TE KEEU, TE MATAWA

Te ota ni mannikiba aio, kaanga te karinan ni mannikiba ae kakaokoro, ma ti iai te bwai ae e kuri n ti tebo irouia, ao anne bon tein riini kaokaoia are e aki rangi n otara mai itinaniku. Akea tein taraakia mannikiba aikai aia a mena n te karinan aio ae a boraio iai.

TE KUN (Utu: Charadriidae) a uareereke aekani mannikiba aikai ma wiia ae e koti ma ni uareereke, kaanga wiin te rube ao a kuri ni katuareereke naba waeia. E nakon te mwaiti ae 65 nakon 70 mwaitin tibiitiiti iaon te aonaba ni kabuta, ma ti teuana ae e reke iaoni Kiritimati. Ma e ti roko n irua man te Aketeke.

SANDPIPERS ** (Utu: Scolopacidae) a kuri n ti tebo ma taiani kun ma a aki mron aoni wiia ma a waikakang. Ma utuni mannikiba aikai a boni kakaoro nakon aron taraakia. Tabeman mai ibuakoia a rangi n abwaabwaki n etiruru wiia, ke a bwaouarake wiia ke a bwaouario. Iai naba aia a rangi ni koti wiia, iai aia moan te ananau rangaia ao iai aia a rangi ni kimototo rangaia. Ma a boni bae ni kaniboo tein riin ni kaokaoia. E nakon te mwaiti ae 85 nakon 90 mwaitin aia tibiitiiti mannikiba aikai iaon te aonnaba ni kabuta ma kaanga ti 10 ae e atia n nooraki iaoni Kiritimati, ao ti 3 nakon 4 aekaia ae e aki tootoki n rooroko n te aba. Boni irua mannikiba aikai ni kabane ao a roko man te Aketeke ike a kabwakabwaka iai.

TE KARAKARA, TE KEEU AO TE MATAWA (Utu: Laridae), a boni kaokoro taraakia mannikiba aikai ma te kun ao te "sandpipers" ma a kan ti tebo ni itera aia a aki kona n nooraki ma ti ngkana e karauaki n tuoaki raoi te rii ma bwain nanon te rabwata. A rangi ni kakanikan aekani mannikiba aikai inanoni kibakibaia ma baiia ae e waikakang ao wiia ae e irariki ma ni waikakang. Angia a manga bukiia ma ti tabeman mai buakoia ae e tei n iriba bukiia n aekaia tenaan io. Mai ibuakon taian tibiitiiti 40 aia a mena n te aonnaba ni kabuta, ao e nakon te mwaiti ae 7 ae e kabwakabwaka iaoni Kiritimati.

FRIGATEBIRDS (Family: Fregatidae) have very long wings, a long hooked bill, and a long forked tail. The gular pouch on males is greatly expandable and bright red. During courtship, they inflate the pouch like a balloon until it is nearly half the size of their body. Frigatebirds are very aggressive toward other birds and often intimidate them into disgorging their food, which they will then eat. Two of the world's five species live on Christmas Island.

ORDER: Charadriiformes
PLOVERS, SANDPIPERS & TERNS

This is a very large group of seemingly very diverse birds; however, they all have similar skeletal characters that are not visible on the outside. There is no one external character shared by all birds in this order.

PLOVERS (Family: Charadriidae) are small birds with short, pigeon-like bills and medium-length legs. Of the 65-70 species worldwide, only one occurs on Christmas Island, but only as a visitor from the Arctic.

SANDPIPERS (Family: Scolopacidae) are similar to plovers but have pointed, not round-tipped, bills. But birds within this family vary widely in almost every other respect. Some have very long straight or upward or downward curved bills, some have very short bills, some have long legs, others short. But they are all linked by similar internal skeletal characters. There are between 85 and 90 species worldwide, but only about 10 have ever been recorded on Christmas Island, and only three to four of these occur regularly. All are visitors from the Arctic where they nest.

TERNs (Family: Laridae) do not look anything like plovers or sandpipers, but they are similar in ways that cannot be seen without a close examination of the skeleton and other internal body parts. Terns are very graceful flyers with pointed wings and thin, pointed bills. Most have a forked tail, but a few, like the noddies, have a wedge-shaped tail. Seven of about 40 species worldwide nest on Christmas Island.

OTA: *Columbiformes*
RUUBE "PIGEONS"

Ai bon ti teuana te utu ni mannikiba inanon te Ota ni mannikiba aio ae e boni maiu ngkai, ae e aranaki bwa te "Columbidae". Te mannikiba ngkoa are e bubura ma n aki kona ni kiba ae e aranaki bwa te "Dodo" (utu: Raphidae) boni iai naba rekerekena ma te rube ma te mannikiba aio are e a kamani bua man te aonnaba 300 tabun te ririki n nako. Te mannikiba aio ma te mannikiba are teuana are utun te Raphidae ngaia ngkoa mannikiba ake a aki kona ni kiba ake a mena n abamwakoro ake i mainikun Aberika.

TE RUBE (Utu: Columbidae) Mannikiba aikai boni mannikiban te aba ao bon akea ae e roko iaoni Kiritimati ni karokoa e a roko te rube are e maninaki iaon te aba inanon te tai ae e tuai n rangi ni maan bwa tao e toka n rabanako iaon tenaani kaibuke ni bwai. Wiia ruube, a kaniboo ma wiia taian kun, ma iai waeia ae te kaeai ae e tanrikaaki are a kakabonganaa ibukin tootokaia iaon te kai. E raka iaon 300 aia tibiitiiti mannikiba aikai iaon te aonnaba.

OTA: *Psittaciformes*
PARROTS

Mannikiba aika tenaani baerote (parrots) iai wiia aika a matenten oia ma ni koti ao iai kaanga te matau ae e kakang i taboni wiia ibukini ibeakin taian ati. Iai uoua taboni waeia aikai a kaitaraa moa ao iai waeia aika uoua aika a kaitaraa bukiia ao angia tibiitiiti ni mannikiba aikai e waikakang bukiia. Angia tenaani baerote a mamaeka n aaba ake a bubura ao ti tabeman mai ibuakoa aika a maeka n taian abamwakoro. Akea te baerote ae boni kaain raoi Kiritimati.

"LORIES" (Utu: Loridae) Mannikiba aikai bon tenaan baerote aika a uareereke ao angia a waikakang bukiia. Iai ngkanne kaokoroia ma baerote ake nikirana ake ti tebo karaia mwaane ma aine, bwa irouia tenaan "lories" e kaokoro karan te mwaane ma te aine, bwa te mwaane, moan te matatokatoka karana. Teuana te tibiitiiti ni mannikiba aio are e kuneaki ngkoa n te abamwakoro teuana n te Betebeke Maiaki, e uotaki irouia taani borau mai Boreneta nakon te aono n Raina mai Meang ma a bon aki konaa n teimatoa maiuia iaoni Kiritimati. Ma a boni kaakarokoaki mai iaon Teraina n taai tabetai.

OTA: *Passeriformes*
MANNIKIBA AKE A TOOTOKA I MWAANGANI KAAI

Te ota ae te "Passeriformes," e nakon te mwaiti ae e raka nakoni iterani mwaitiia mannikiba iaon te aonnaba Iai teia mannikiba aika a mena n te ota aio, ae kaanga e tei n okoro: iai tein riini ngangarakeia ae e kaokoro, bwain rabwataia are a kakaawakina iai te oera (oil glands), ae e a mena irarikini bukiia, ao iai mwatiretin baiia mai moa ao mai buki ao waeia ae e maraurau are a boni konaa n tootoka iai i mwaangan te kai.

MANNIKIBA N AROIA TENNANI BOKIKOKIKO AKE MAN TE AONNABA NIKAWAI (Utu: Sylviidae). Te utu ae te kabanea ni bubura bwa 550 mwaitiia n aia tibiitiiti inanon te ota ae te kabanea naba ni bubura irouia mannikiba. Mannikiba aikai, a uareereke ma ni mata baareka ke n taraa n roo karani buraeia ao a irariki ma ni mataroo karani wiia. Angia kaain te utu ni mannikiba aio a boni maeka ma ni kaabung iaon angiin aban te Betebeke inanoni ngaa n ririki ao e rangi n tiraua aekan aia tibiitiiti aika a kakaokoro. E kona n nooraki aio iroun te aeka n tibiitiiti ni mannikiba teuana ae te Bokikokiko ae e a rangi ni kaokoro ngkai teina ma aekan nako utuna n te aonnaba.

ORDER: *Columbiformes*
PIGEONS

There is only one living family in this order, the Columbidae. The large, flightless Dodo (family: Raphidae) was related to pigeons, but it became extinct more than 300 years ago. It and the only other member of the Raphidae were flightless birds that lived on islands off the east coast of Africa.

PIGEONS (Family: Columbidae) are landbirds, and none had ever made it to Christmas Island until the domestic pigeon reached the island fairly recently, probably as a stow-away on supply ships. Pigeons have plover-like bills, but have feet with a fourth, hind-facing toe designed for perching on limbs. There are over 300 species in the world.

ORDER: *Psittaciformes*
PARROTS

Parrots have short, thick-based bills with a sharp hook at the end used for breaking open large seeds. They have two forward-facing toes and two rear-facing toes, and many species have pointed tails. Parrots live primarily on the continents, with very few representatives on islands. No parrots are native to Christmas Island.

LORIES (Family: Loridae) are small parrots, and most have a pointed tail. Unlike other parrots in which the sexes look nearly the same, male lories differ from the females in being very colorful. One species, originally found on only one island in the South Pacific, was brought by the early Polynesian explorers to the northern Line Islands, but they never survived for long on Christmas Island. They are still brought here occasionally from Washington Island.

ORDER: *Passeriformes*
PERCHING BIRDS

The order Passeriformes, with about 5,700 species, comprises more than half of all the world's birds. Birds in this order share several unique characteristics: a distinctive bony palate (roof of the mouth), oil glands near the tail, and forelimb and hindlimb muscles, along with a flexible hind toe, that are adaptations for perching on limbs.

THE OLD WORLD WARBLERS (Family: Sylviidae), with about 550 species, is the largest family within the largest order of birds. They are small birds, most with dull brown- or gray-colored plumage and thin, blunt-tipped bills. Members of this group have successfully colonized most of the Pacific islands where they have evolved over the millennia into distinct species. Such is the case in the northern Line Islands where one species, the Line Islands Warbler, or Bokikokiko, has evolved to the point where it is now quite distinct from all other species in the world.

Mannikiba Ake A Riki Bwa Kaain Te Aba

RESIDENT SPECIES



TE RURU

Pterodroma alba

PHOENIX PETREL

AEKANA: *Ikawain* te mannikiba aio e kaniboo buburana ma te Tinebu (Christmas Shearwater), ma iai birotona ae e mainaina. E uareereke ma ni matenten wiina ngkana e kabatauaki ma te Tanguuoa, te Tinebu ao te Nna. E aki tootoki n nonooraki ni kibakiba riaon taian ngao ni man ao n taabo ni kabane iaon te aba n auan te ngaina. *Natina*, e kuri ni mata roo karan rangana ma n roroo waena, a matenten ma ni koti wiina ao e mata roo karani moana.

TANGINA: Inanon ana tai ni kibakiba ao ngkana e boni mena ni ngaona, e tangi n anti, kaanga "*kee kee kee kee kee kee*."

ANA TAI NI KABWAKABWAKA: E kabwakabwaka inanon te ririki, ma iai aia tai ni kabwakabwaka ae kaanga e ataaki, inanon uoua te au (seasons). Aikai imarenan namakaina aika Nobemba nakon Tianuare, ao Eberi nakon Tuun. E mamaeka n te aba ni kabanea bongin te ririki. Ngaona, te mwanono ao n angiin te tai e mena iaan taiani kai n nuun te aroka ke e mena n te mwanono ae e aki rangi n nano. Ti teuana bunnatoina n ana tai ni kabwakabwaka are e nakon aua ao te iterana te wiiki imwaain ae e raure. E aki ataaki te ririki are e kona iai ni kiba natina ae e uareereke ao e aki ataaki naba ana ririki are e kona iai n icin.

AMWARAKENA: Angiini kanana te riro are e uareereke are e a bon anaia n te tairiki.

TIBWATIBWAANA: E ti kuneaki i nukani marawan te Betebeke Maiaki, (tao ngkai, e a boni bae n ti reke iaoni Kiritimati). Te bootaki ni mannikiba are e mena n aban Rawaki, ngkana arona bwa boni iai naba ngkai, e uareereke mwaitiia ai ngaia are a riai n tararuaaki raoi aekani mannikiba aikai iaoni Kiritimati bwa a aonga ni kona n teimatoa maiuia.

MWAITIIA IAONI KIRITIMATI: A ewa iaon angiin atimwakoro, a ti akea n te benintura are mai Maiaki-mainiku. Aia tabo ni kabwakabwaka, a mena n atimwakoro inanon te nama ake akea iai taiani katamwa. Te katautau iaoni mwaitiia, e nakon 20,000 nakon 25,000 te mannikiba.

IDENTIFICATION: *Adult* is similar in size to the Christmas Shearwater, but has a white belly. Bill short and stocky compared with the other three shearwaters. Often seen flying about nest sites and elsewhere on the island during the day. *Chick* has gray legs and black feet, short, thick bill, gray facial skin.

VOICE: In flight and at the nest, an eerie "witch-like" cackling with a musical roll—*keh keh keh keh keh keh keh keh*.

BREEDING BIOLOGY:

Nests throughout the year, but with two fairly distinct seasons, roughly November-January and April-June. Present at the island year round. Nest is a scrape or shallow depression, usually under matted vegetation, occasionally in the shade of low bush or in a shallow burrow. Lays one white egg. Incubation takes 4 ½ weeks. Age at which chick is able to fly is not known, nor is age at sexual maturity.

FEEDING: Primarily juvenile flying squid, mostly at night.

DISTRIBUTION: Found only in the central South Pacific Ocean (possibly, now only on Christmas Island). The colony on Phoenix Island, if it still exists, has always been small (~200-250 birds), so protection on Christmas Island is essential to the continued existence of this species.

STATUS ON CHRISTMAS ISLAND:

Common over most of the island except the South-east Peninsula. For nesting, restricted to cat-free islets in the lagoons. Past estimates have ranged from 20,000-25,000 birds, but numbers are surely much lower than that now.



TE TANGIUOUA

Puffinus pacificus

WEDGE-TAILED SHEARWATER

AEKANA: Angiia mannikiba ake a *ikawai* a roo ma n roo ni buraun (dark morph), ma iai tabeman mai ibuakoa ae e kuri ni mai teutana riki roroa-ia. Te mannikiba are e mai karana ni mannikiba (true light morph) e tuai man reke iaoni Kiritimati. E bubura riki nakon te tinebu: ao bukina kaanga e tei ni iriba. Angiin te tai e nonooraki ni kikibakiba nako ao n oki man ana tabo ni kabwakabwaka ni kaakakioa taari, ike e amwaamwarake iai n te ngaina. *Natina* e kau motomoto ma ni mataroo karan rangana ao waena, iai wiina ae e irariki ma ni mataroo ao e mataroo naba karani moana.

TANGINA: Ngkana e mena ni ngaona, ao ai moarara riki n te tairiki, e tang kaanga tangin te taobe ae e kangai, "oooooooo" n ana tai n ikerake, tabetai e a manga nene tangina aio mai inukana ao ngkanne imwiina e a manga tang kaanga manga tangin te tibu te tei ae e kanakoa ikena.

ANA TAI NI KABWAKABWAKA: A boni bane ni kabwakabwaka te bootaki ni mannikiba aio n te tai ae ti teuana man namakaina aika Meei nakon Okitobwa; a kitana te aba imwiin aia tai ni kabwakabwaka ao a aki oki ni karokoa te ririki are imwiina. Ngaoia kaanga te mwanono ae e nakon 30 nakon 100 te tientemiita (centimetres) nanona. E kabwaka ti teuana ana bunnatoi imarenani Meei nakon Tuurai. E nakon 7 ao te iterana te wiiki imwaain rauren natina mai inanon bunnatoina. Imwiin 15 nakon 16 te wiiki, ao e kitana ngaona te mannikiba ae e uareereke aio ma ni kiba nako marawa. Mannikiba aika a uareereke aikai, a kona ni iein ngkana e a koro 4 aia ririki.

AMWARAKENA: Angiini kanana, buun te riro ae e uareereke ao te ika, te riro are e kiikiba, aekan te tewe ma te maebo, te ku ma te ta,ao te tawatawa ma te kimokimo. Buburani kanana e nakon 7 nakon 8 te tientemiita. Angiin te tai, e amwaamwarake n te ngaina. Aron akawana, e tebo man te rieta ae e aki rangi n rietaata, n ti kateboa atuna ma roroana; e amwaamwarake naba n tekateka.

TIBWATIBWAANA: E tira ni marawan te Betebeke ma marawan Inria aika a kabuebue (tropical) ma ake a aki rangi ni kabuebue (subtropical).

MWAITIIA IAONI KIRITIMATI: A kuri n reke iaoni Kiritimati ni kabutaa. Man te wareman are e a tia ni karaoaki, ao n teina, e bibitaki mwaitiia mannikiba aikai, ao mai imwiin te wareman irouia aomata aika a kakaokoro, mwaitiia mannikiba aikai, e a nakon 6,000 nakon 1,000,000. E a bon tia naba n nonooraki bwa a rangi n tiraua naba mannikiba aikai ni maamate, tao anne naba bukini bibitaki-ni mwaitiia. E riki naba ni kangaanga raweani mwaitiia mannikiba aikai kioina bwa e mena ngaona inanon te bwanga ao n angiin te tai ngkana e aki mena ni ngaona, e mena i taari. Angiin te tai e kabwakabwaka ma ni karaoi ngaona n taian atimwakoro ake a uareereke ake akea iai taiani katamwa ma kimoa.



IDENTIFICATION: Most adults are dark, sooty brown (dark morph), but a few have noticeably paler throat. The true light morph with all white undersides has not been found on Christmas Island. Larger than Christmas Shearwater; tail wedge-shaped. Most often seen flying to and from breeding sites to offshore areas where it feeds during the day. Chick has fleshy-gray legs and feet, long, thin dark gray bill and facial skin.

VOICE: At the nest, a moaning dove-like ooooooo on inhaling, sometimes louder with emphasis in the middle, followed by a braying like a lamb on exhaling.

BREEDING BIOLOGY: Nests in dense colonies from May-October; leaves the island after the nesting season and does not return until the following year. Nest is a burrow 30-100 cm deep. Lays one white egg. Incubation takes 7½ weeks. The chick leaves the burrow after 15-16 weeks and flies out to sea. Young birds reach sexual maturity at about 4 years.

FEEDING: Larval squid (mostly) and fish, primarily flying squid, goatfish, squirrelfish, mackerel. Food size, generally 7-8 cm. Feeds primarily in the daytime. Plunges from a low angle, submerging only head and neck; also feeds while sitting.

DISTRIBUTION: Abundant in tropical and subtropical Pacific and Indian oceans.

STATUS ON CHRISTMAS ISLAND: Found nearly throughout. Populations may fluctuate widely, with estimates over the years ranging from 6,000-1,000,000 birds. Massive die-offs have been observed, also suggestive of widely fluctuating numbers. Complicating the picture is the fact that numbers of this

species are especially difficult to estimate because it nests in burrows and spends most of its time when away from the nest well out at sea. It nests primarily on small islets that are free of cats.



TE TINEBU

Puffinus nativitatis

CHRISTMAS SHEARWATER

AEKANA: *Ikawain* te mannikiba aio, e uareereke man roo riki nakon te tangiuoua (e kuri n rooro karana) ao bukina e koti riki ma ni mron ai uana naba wiina ae e koti naba ma ni mron. A tata riki ioioani baina ma n eti ruru inanoni kibakibana. Akea te bwai ae e buraun iaoni baina mai ieta ke akea inani baina mai ieta. E kuri n nonooraki riki nakon te tangiuoua ni kikibakiba iririkini ngaoniman ma ni kikibakiba riao te aba n te ngaina. *Natina* e rooro rangana ma waena, e anaanau ma ni waikakang wiina ao e rooro kunin moana.

TANGINA: Ngkana e mena ni ngaona, ao e tangi ni bwanaa buaka ae kaanga e tang mai bwairina ni kangai, "oooooooo" ao imwiina e a manga tang ni kakamaaku kaanga tangin te anti ae e kaangai tangina, "ow-oooo-ow-oooo-ow-oooo..." A kakaokoro bwanaaia mwaane ma aine ma e tuai raoi ni kona ni kinaaki raoi bwa e nga iai bwanaan te aine ao e nga iai bwanaan te mwaane. Angiin te tai, a aki kakarongoaa mannikiba aikai inanoni kibakibaia.

ANA TAI NI KABWAKABWAKA:

E kabwakabwaka rinanon te ririki ma kaanga bon iai riki te au are e kabwakabwaka iai are man Ritemba ni karokoa Beberuare. E kaniboo ngaona ma ngaon te ruru ma angiin riki ana tai, e mena ngaona iaan taian aroka, e kuri n aki meemena ngaona inanon te bwanga. Ti teuana bunnatoina n ana tai ni kabwakabwaka ao e nakon 7 ao te iterana te wiiki imwaain ae e raure natina mani bunnatoina. Te mannikiba ae e uareereke aio e a kona ni kiba ngkana e a koro tao 14 ana wiiki. E aki ataaki bwa te rorora te mannikiba aio imwaain are e kona ni iein.

AMWARAKENA: Kanana a kuri n ti tebo buburaia ma aekani kanan te tangiuoua. Tao e boni kan ti tebo naba amwarakena ma te tangiuoua.

TIBWATIBWAANA: Ni marawan te Betebeke Nuka mai Awai maiaki nakon te Mwakeitiati.

MWAITIIA IAONI KIRITIMATI: A ewa n reke n angiin atimwakoro, e ti aki reke n te benintura are mai Maiaki-mainiku. A mena ngaioia ma ni kabwakabwaka n tenaan atimwakoro ake a tan ake a mena inanon te nama. Mwaitiia, e katautauaki nakon 6,000 nakon 15,000.

IDENTIFICATION: *Adult* is smaller and darker than Wedge-tailed (nearly black) with a shorter, rounder tail and more rapid wingbeats; wings held straighter in flight. Lacks brown scaling on upper wing coverts. More likely than Wedge-tailed to be seen flying around nesting sites and elsewhere over land during the day. *Chick* has black legs and feet, long, thin bill, black facial skin.

VOICE: At the nest, a very harsh, nasal *grääääääää*, a moaning *oooooooo*, and an eerie moaning *ow-oooo ow-oooo ow-oooo...* Males and females give different calls, but it is not clear which calls are attributable to which sex. Usually silent in flight.

BREEDING BIOLOGY: Nests throughout the year, but with an apparent seasonal peak in December-February. Nest is similar to that of Phoenix Petrel, but more frequently nests under bushes, seldom in burrows. Lays one white egg. Incubation takes 7½ weeks. Chick is able to fly at about 14 weeks. It is not known how long the young take to reach sexual maturity.

FEEDING: Foods eaten are apparently similar in size and types to those of the Wedge-tailed Shearwater. Probably feeds in a fashion similar to that of Wedge-tailed Shearwater.

DISTRIBUTION: Central Pacific Ocean from Hawaii south to the Marquesas.

STATUS ON CHRISTMAS ISLAND: Common over most of the island except the South-east Peninsula. Nests on protected islets in the lagoons. Population estimates have varied from 6,000-15,000 birds.



TE NNA

Puffinus iherminieri

AUDUBON'S SHEARWATER

AEKANA: *Ikawaia* mannikiba aikai e uareereke riki nakon te tinebu ao te tangiuoua. E roroo karan aona ao e mainaina aana. E kuri n aki nonooraki ni kitana ngaona. E amwaamwarake i taari ao e kiikiba nako ma ni ngaona angiin te tai n te tairiki. *Natina* e mataroo burae-na, e mainaina buuana ao e uareereke ma ni irariki wiina.

TANGINA: E tang kaanga tangin te katamwa, ao e taatang angiin ana tai n te tairiki.

ANA TAI NI KABWAKABWAKA: E uareereke te atatai iaon rongorongon te mannikiba aio iaoni Kiritimati. E a bon tibwa kuneaki ni kabwakabwaka n 1965 ma iai ribooti tabeua are a bon taku bwa a kamani kabwakabwaka imwaain te tai aio mannikiba aikai. Aia tai ni kabwakabwaka mannikiba aikai are moan te tiraua iai bunnatoia, e taraa n ae man namakaina aika Tuun nakon Nobembwa. Ngaoia, e mena n te bwanga ae e aki rangi n nano, ma n tabetai a kona ni mena ni mwanono aika a nano ke a aki rangi n nano iaan tenaani kai aika a mangaongao. N ana tai ni kabwakabwaka, ti teuana bunnatoia ae e mainaina ao e raure ngkana e a koro 7 tabun wiikina. E kona ni kiba te mannikiba ae e uareereke aei imwiin 10 nakon 10 ao te iterana te wiiki. A kona ni kabwakabwaka mannikiba aika a uareereke aikai ngkana tao e a koro 8 ana ririki.

AMWARAKENA: E aki ataaki bwa tera kanana ae e kang iaoni Kiritimati ma e katautauaki bwa bunin te riro ao te ika n aekani kanaia tenaan tangiuoua ma te tinebu. Angiin te tai ao e amwarake iaontari ni karaua n tekateka.

TIBWATIBWAANA: E angii ni marawa ake a kabuebue (tropical oceans) iaon te aonnaba.

MWAITIHA IAONI KIRITIMATI: Ni karokoa ngkai, a ti kuneaki n taian nama ake a mena mai nuka. N taai aika a nako, ao a tia ni katautauaki mwaitiia bwa e nakon 2,000 ma e a tia n nooraki te mwaiti aio bwa e a tia n rangin ewa mai imwiin 1980.

IDENTIFICATION: *Adult* is smaller than the other shearwaters; black above, all white below. Seldom seen away from the nest. Feeds at sea and commutes to and from nesting sites primarily at night. *Chick* has gray plumage with white throat; small, slender bill.

VOICE: Typically, cat-like howls, especially at night.

BREEDING BIOLOGY:

Little is known about this species on Christmas Island. It was not definitely found breeding on the island until 1965, although earlier reports exist. The peak egg-laying period appears to be June–November. Nest is usually in a shallow burrow, but may be in a deep depression, or a shallow depression under matted vegetation. Lays one white egg. Incubation takes just over 7 weeks. Chick is able to fly after 10-10½ weeks. Young first breed at about 8 years.

FEEDING: Foods taken at Christmas Island are not known, but presumed to be larval squid and fish like the other shearwaters. Generally feeds at the surface while sitting on the water.

DISTRIBUTION: Common throughout much of the tropical oceans worldwide.

STATUS ON CHRISTMAS ISLAND: Thus far, found only in the Central Lagoons area. Population has been estimated at about 2,000 birds in the past, but numbers appear to have increased significantly since 1980.



TE BWEBWE NI MARAWA

Nesofregatta fuliginosa

POLYNESIAN STORM-PETREL

AEKANA: *Ikawain* te mannikiba aio e rangi n tei n okoro; te mannikiba ae e uareereke ma n rooro ni mainaina, a kimototo baina ao e manga bukina, e mainaina aan rabwatana ma ti iai te bwai ae e rooro ae e mena iaani bwabwana ao iai te bwai ae e mainaina iaoni bukina. A nim ngakeni waena n aekani mannikibani Kiritimati ake nikirana, ma a anaanau riki rangana ao a tei ni irariki ma ti tebo ma a na mwaoto. Aron amwarakena i taari, e kikibakiba iaontari ao rangana ti tebo ma a mwamwaie iaontari. A aki rangi n nene ioioakini baina inanon ana tai ni kibakiba ao n titiku rikaaki. E kikibakiba ni kitana ao ni kakioa te aba n tabwenani mainiku ao ni bungin taai. Natina, kaanga bon ti tebo naba anuana ma ana ikawai.

TANGINA: E aki ataaki?

ANA TAI NI KABWAKABWAKA: E moa man Tuurai ke inanon namwakaina aika Aokati nakon Tianuare.. Mannikiba aikai ni kabane a bane ni kitana te aba imwiin aia tai ni kabwakabwaka ao a manga oki n te ririki are imwiina. Ngaoia e mena n te bwanga ae e aki rangi n nano inanon te karereua ae akea kaai iai, ke n taabo ake a tira kaai iai; e meemena naba ngaona n taiani bwangabwanga ni bwaa. Bunnatoina bon ti teuana ae e mainaina. E aki ataaki bwa e raure nningai te bunnatoi aio ao e aki ataaki naba te tai are e ewenako ma ni kona ni kiba te mannikiba ae e uareereke aio iai. Irarikina, ao e aki ataaki naba bwa e iein n te rooro ra.

AMWARAKENA: Manin taari ake a uareereke ao e kana naba ikani marawa te “pelagic water strider” ao taiani “crustaceans”, maan ake a mamatoa boraia n aron te mwanai. Aron amwarakena, e katebetebei kanana mai iaon taari.

TIBWATIBWAANA: E ti kuneaki n aban te Betebeke ake a kabuebue (tropical Pacific), ma ngkai a bon ti kona n reke i, ai ngaia are a na riai n tararuaki raoni mannikiba aikai iaoni Kiritimati bwa e aonga ni kona n teimatoa maiuia.

MWAITIIA IAONI KIRITIMATI: A kabwakabwaka ni ngaoia n taian nama ake a mena i nuka, i Motu Tabu, i Motu * Upua ao (ai tibwa ngkai) n te nama ae “Manulu Lagoon”, ae e a tia ni kanakoaki taarina ibukin te taoro. mwaitiia mannikiba aikai e katautauaki nakon 1,000 nakon 2,000.



IDENTIFICATION: *Adult* is very distinctive; a small black-and-white, short-winged bird with notched tail, mostly white underparts except for a sooty black breast band; white bar across rump. Like all the seabirds at Christmas, it has webbed feet, but its legs are longer than most and appear thin and fragile. At sea, feeds by “bouncing” up and down at the water’s surface with legs dangling as if dancing on the water. Flies with alternating shallow wingbeats and brief gliding. Commutes to and from the island at dawn and dusk. *Chick* has same basic pattern as adult.

VOICE: Unknown?

BREEDING BIOLOGY: Nesting season is primarily from July or August-January. All birds leave the island after the breeding season and return the following year. Nest is a shallow burrow either in an open, sparsely vegetated area or in dense, matted vegetation; also nests in crevices in coral rubble. Lays one white egg. Incubation period is unknown, as are length of time to fledging and age at sexual maturity.

FEEDING: Tiny arthropods including the pelagic water strider and various crustaceans. Feeds by picking at the water’s surface.

DISTRIBUTION: Found almost exclusively in the tropical South Pacific, but now eradicated from many island groups by rats and cats; thus protection on Christmas Island may be essential to the continued existence of this species.

STATUS ON CHRISTMAS ISLAND: For nesting, Central Lagoons, Motu Tabu, Motu Upua, and (at least formerly) Manulu Lagoon, which is now mostly drained for salt production. The population has been estimated to be about 1,000-2,000 birds, but it may be much smaller now.

TE TAAKE

Phaethon rubricauda

RED-TAILED TROPICBIRD

AEKANA: *Ikawain* te mannikiba aio e kuri n ti tebo ma te karakara ke te keeu ae e tei n okoro; e mainaina karana ao iai taian roroo aika reke ni baina, e uraura wiina ao iai buraeni bukina aika a anaanau aika a uraura. Aroni kibakibana, e katatai baina n aki rangi ni kanenei. Ngkana e *tuai raoi ni ikawai* te mannikiba aio ao akea buraeni bukina ake a anaanau ao iai bwaai aika a roroo iaon nukana ao atuna. *Natina*, iai buraena ao buraenikimoana ae e mataroo ni buraun ao ni mainaina ngkana e raure ao e roroo wiina.

TANGINA: Inanon ana tai ni kibakiba ngkana e boo te kabwakabwaka, ao moan te bwanaa buaka, kaanga e tangi n, "*rack!*" ke "*a-rack!*" Ni ngaona, bon aio naba aekan tangina ae kaanga "*arack-arack-arack!*", ao ngkana arona bwa iai ae e kakubaa ao e a bon rangi ni bwanaa buaka riki!

ANA TAI NI KABWAKABWAKA: E kabwakabwaka n angiin te tai n te ririki, ma bon ana tai riki inanon namakaina aika Tuun nakon Ritemba. Teini ngaona, e a mena naba n te mwanono ae e uareereke riaan taiani kai. Bunnatoina bon ti teuana ae karana, e mata mainaina, ni mata baareka ni buraun ao iai taiani bwai aika a beeboro ma n uraura iaona. E raure mani bunnatoina ngkana e koro tao 6 te wiiki. E a kona ni kiba te mannikiba ae e uareereke aio imwiin 12 nakon 13 te wiiki. A kona ni iein ngkana e koro 2 nakon 3 aia ririki.

AMWARAKENA: Ti tebo mwaitini kanana te ika ma te riro (e angii riki te onouti ao te riro ae e kiikiba), ao buburani kanana, e a nakon 12.5 te tientemiita abakiia ma n angiin te tai, e nakon 8.5 nakon 9.5 te tientemiita abakiia. E amwaamwarake n ti ngaia ao tiaki n te kurubu. Aron akawana, e beti ieta ni kabaraaka atuna ma wiina ao imwiina ao e a ti tebo rikaa-ki naba ma iterani baina aika a rukumaki.

TIBWATIBWAANA: A reke n ewa ni marawan te Betebeke ao Inria aika a kabuebue.

MWAITIHA IAONI KIRITIMATI: A kabwakabwaka n angiin taabo, ma a rangi n tiraua ngkai ni mwaken taian nama ake a mena mai nuka, (ao ngkekei, ni Ngaon te Taake). Mmwaitiia e katautauaki nakon 6,000 nakon 9,000 ma e a tia ni keerikaaki mwaitiia imwiia aomata ake a aki toki n anaanaia.



IDENTIFICATION: *Adult* is a distinctive tern-like bird; white with black mottling in the wings, red bill, and long red central tail streamers. Flies with rapid, shallow wingbeats. *Immature* lacks tail streamers and has black barring on back and head. *Chick*, fully feathered with down at hatching, is light gray-brown to white with black bill.

VOICE: In flight at nesting colony, a loud, harsh, ringing *rack!* or *arack!* At the nest typically a very harsh arack-arack-a; when disturbed, a similarly harsh, unpleasant r-aaaaaaa!

BREEDING BIOLOGY: Nests throughout the year, but primarily from June-December. Nest is a slight depression in the shade of a bush. Lays one whitish to dirty brown egg with deep purplish to reddish-brown markings. Incubation takes 6 weeks. Chick is able to fly after 12-13 weeks. Young reach sexual maturity at 2-3 years.

FEEDING: About equal numbers of fish and squid (primarily flying fish and flying squid) up to 12.5 cm long, but usually between 8.5 and 9.5 cm. Feeds singly, not in groups. Forages by hovering with lowered head and bill, followed by a controlled plunge with half-folded wings.

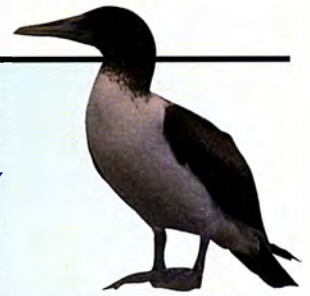
DISTRIBUTION: Widespread in the tropical Pacific and Indian oceans.

STATUS ON CHRISTMAS ISLAND: Nests nearly throughout, but now most plentiful in the Central Lagoons area (and formerly Ngaon te Taake). The population has been estimated at 6,000-9,000 birds but numbers have declined significantly as the result of human predation.

TE MOUAKENA

Sula dactylatra

MASKED BOOBY



AEKANA: *Ikawaina* e kuri ni mainaina ni kabane aon rabwatana ma e roroo karani baina (ni ikotaki ma bukina). E tei n roroo karani moana ao e baa-booboo matana. Karani wiina, kaanga e baaboo-booboo ke e mawaawa ni baaboo-booboo, ao e tokatoka riki karan te mwaane nakon te aine. Karani waena, kaanga e tei ni mataroo (olive drab). Ngkana e *tuai n rangi ni ikawai* ao e roroo atuna ao roroana, iai te bwai ae e mainaina ae e katobibia roroana ni iai bwaai aika a roroo iai, e mainaina bwabwaana mai inano ma birotona. E kuri ni kaniboo ma te kibwi. E mainaina natina ma wiina ae kaanga e mataroo, ai uana naba ma karani moana ao waena.



IDENTIFICATION: *Adult* is mostly white with black flight feathers (including the tail). Blackish area of skin around face; yellow eye. Bill yellow to greenish-yellow, brighter in male than female. Feet olive-drab. *Immature* has mostly blackish head and neck, white collar, mottled black back, and white lower breast and belly. Superficially similar to Brown Booby. *Chick* is white with dark gray bill, facial skin, and feet.

TANGINA: Te mwaane, kaanga e tangi ni katiitii ni kanimomoi, n te bwana ae e nene ao te aine, e tangi mai bwairina, kaanga, "hank!"

ANA TAI NI KABWAKABWAKA: E kabwakabwaka n taai nako inanon te ririki, ma e aki karaoa aio n atimwakoro ake a mena n te nama are e bubura. A angii irarikin tabon te aba are mai Maiaki-mainiku (South-east Point) ao ni mwaaken taian nama mai nuka. (Central Lagoon area). Ngaoia e mena n te mwanono ae e aki rangi n nano n uakaan ma taian aroka. Ngkana e kabwakabwaka, ao e kona ni kabwakai bunnatoina teuana ke uoua ae e mainaina kaanga karan te tiaoki. E nakon 6 te wiiki imwaain ae a raure. Ngkana e kabwakai uoua bunnatoina, ao e ti kaikawaa temanna. E kona ni kiba te mannikiba ae e uareereke aio imwiin tao 17 te wiiki. E a kona ni iein ngke e a koro 4 ana ririki.



VOICE: Male gives a loud hissing whistle; female a nasal *hank*.

BREEDING BIOLOGY: Nests throughout the year nearly island-wide, except for islets in the main lagoon. Most common near South-east Point and in the Central Lagoons area. Nest is a slight depression on bare ground usually adjacent to a bush. Typically lays one, sometimes two, chalky white eggs. Incubation takes 6 weeks. Only raises one chick, even if it lays two eggs. Chick is able to fly after about 17 weeks. Young reaches sexual maturity in about 4 years.

AMWARAKENA: Angiini kanana 60 te katebubua, mai iai, te onauti ao te taman ao 40 te katebubua mai iai te riro; mwaitin kanana te ika, a kee riki ao a bubura riki nakoni kanaia te kibwi, ao te koota. Aron amwarakena, e kiba ni baatetei rikaaki man te rieta ae 15 nakon 30 te miita rietana. Ngkana e a tebo riaantari, ao e boni kona n ae e a manga uaua ni kaea konana.

TIBWATIBWAANA: E reke ni marawan te Betebeke, Inria ao te Ateranteke ake a kabuebue ao a aki rangi ni kabuebue.

MWAITIIA IAONI KIRITIMATI: E ngae n ae e boni korakora naba mwaitiia mannikiba aikai, e a boni keerikaaki mwaitiia imwiin te iraa irouia aomata. Te katautau iaoni mwaitiia n te 1960 tabun nakon moan te 1980 tabun, a katautauaki mwaitiia bwa e nakon te mwaiti ae 1,000 nakon 3,000, ma n ririki aika a tibwa nako, ao e a bon rangi ni uareereke riki aia mwaiti. Mwaitiia ngkai tao a kan ti tebo ma te kibwi.



FEEDING: About 60% flying fish and mackerel and 40% squid; eats fewer and larger fish than other boobies (usually in the range of 10-20 cm). Feeds by plunging vertically from 15-30 meters high. Once under water, will often swim after prey using wings as flippers.

DISTRIBUTION: Widespread in the tropical and subtropical Pacific, Indian, and Atlantic oceans.

STATUS ON CHRISTMAS ISLAND: This species has declined significantly as a result of poaching. Estimates in the late 1960s to early 1980s ranged from 1,000-3,000 birds; however, in recent years the numbers have been considerably lower. It now may be scarcely more common than the Brown Booby.



TE KIBWI

Sula leucogaster

BROWN BOOBY

AEKANA: *Ikawaina* e buraun karana ma birotona ae e otara mainainana n okoro karana ma bwabwaana ae e buraun. A baabooboo wiina ma waena; e buru karani moana irouia mwaane ao irouia aine, e mata mawaawa ni baabooboo. Te mannikiba are e *tuai n rangi ni ikawai*, e kaniboo taraana ma are te ikawai, ma birotona e mai buraun ni iai te mainaina teutana iai n ana kauoua n ririki. *Natina* e mainaina ma wiina ae e roroo ao ai uana naba ma karani moana.

TANGINA: Te mwaane e kanimomoi n ai aron ae e a kani bono ikena, ao te aine, e bubura tangina n tang kaanga aekan te mouakena.

ANA TAI NI KABWAKABWAKA: E tei n ae uoua te au a ana tai ni kabwakabwaka, teuana, boni man Eberi nakon Tuun ao are teuana man Okitobwa nakon Ritembwa, ma e boni kona ni kabwakabwaka n te tai ae e aki akaka n te ririki. Tabeman mai ibuakoia mannikiba aikai a tiku iaon te aba ni kabanea te ririki. Ngaonia, te bae e a karaoaki naba mai imwiini bobootan taiani kai ma baanikai ake e a kamenaaki naba iaontano, angiin te tai ni uakaan ma taiani kai. Ngkana e kabwakabwaka, ao e nakon 1 nakon 4 bunnatoina ae e mata mainaina kaanga karan te tiaoki ae e mainaina. (ma angiin te tai ao e bon nakon ti uoua bunnatoina.) E nakon te maan ae 6 te wiiki imwaain raureia. Te mannikiba aio, e bon ti kakaikawaa natina ae ti temanna, e burenbwai ae e na kaikawaia uoman. A kona ni kiba mannikiba aika a uareereke aikai imwiin 13 ao te iterana te wiiki, a rangi n tawe riki nakon te mouakena. Roroia ngkana a iein, e nakon 4 te ririki.

AMWARAKENA: 95 te katebubua mai ibuakoni kanana te maebo ke te tewe (goatfish) ao 5 te katebubua, te riro. E kaniboo aron amwarakena ma te mouakena, ma e aki kiba rikaaki ni baatetei ma kaanga e kiba rikaaki n tebo mai irarikina man te rieta ae e nakon 9 nakon 12 te miita.

TIBWATIBWAANA: E reereke ni marawan te Betebeke, Inria ao te Ateranteke ake a kabuebue ao a aki rangi ni kabuebue.

MWAITIHA IAONI KIRITIMATI: E aki rangi n roko n ewaan te mouakena ao e aki mena n angiin taabo ake mena iai, ao ngaona ma ana tabo ni kabwakabwaka a mena i tabon te aba mai Maiaki-mainiku (southeast Point). Mai ikai ao e tei ni karako mwaitiia imwiin anaakiia irouia aomata. Ana tabo ni kabwakabwaka are teuana are a mena naba iai ngaona, a mena n atimwakoro ake a uareereke ake a mena n taian nama mai nuka. Te katautau iaomia mannikiba aikai bwa e nakon te mwaiti ae 80 nakon 600 mwaitiia. Aekani mannikiba aikai, boni ngaia tenaani kabanea ni karako mwaitiia ni kabwakabwaka iaoni Kiritimati.



IDENTIFICATION: *Adult* is brown with distinctive white belly sharply separated from brown breast. Bill and feet yellow; facial skin blue (male) or yellow-green (female). *Immature* is similar to adult, but belly is light sooty brown, becoming mottled with white in second year. *Chick* is white with black bill and facial skin.

VOICE: Male gives a wheezy, whistling *schweee*; female a loud, harsh honking similar to Masked.

BREEDING BIOLOGY: Appears to have two distinct nesting seasons, one from April-June and another from October-December, but may breed at any time of the year. A few birds remain around the island year round. Nest is simple construction of twigs and leaves on the ground, usually adjacent to or near a bush. Lays from 1-4 chalky white eggs (typically 2). Incubation takes 6 weeks. Only raises one chick (rarely two), which is able to fly after 13½ weeks, noticeably sooner than Masked. Age at sexual maturity is about 4 years.

FEEDING: About 95% fish (mostly goatfish) and 5% squid. Feeding method similar to Masked, but typically plunges at an angle rather than near vertically, and generally from only 9-12 meters high.

DISTRIBUTION: Widespread in the tropical Pacific, Indian, and Atlantic oceans.

STATUS ON CHRISTMAS ISLAND: Less widespread and less common than Masked, with nesting sites primarily in the vicinity of South-east Point (where it may have been eliminated recently by poaching) and the many islets in the Central Lagoons. Estimates have ranged from 80-600 birds. This may be the least common nesting bird on Christmas Island.

TE KOOTA

Sula sula

RED-FOOTED BOOBY

AEKANA: *Ikawaina* e kuri ni kaniboo ma te mouakena ma e uareereke riki ma ni iai bukina ae e mainaina ao ni baaboo nako atuna. Iaoni baina mai buki, boni iai bwaai aika a tei ni mata buraun n roo. E buru ni mataroo wiina, e bingke moana, ao waena e tokatoka uraurana. E irariki riki wiina nakon te mouakena ma te kibwi ao iai terenakon teutana wiina man ramwana. Ngkana e *tuai n rangi ni ikawai*, ao e buraun teutana aon atuna, e mai riki karan rabwatana ni iai te bwai ae e mena iaoni bwabwaana ae e roo karana. N aia kauoua n ririki ni maiu mannikiba aikai ao e matabaareka mainainan rabwataia ma boni iai naba te bwai are e roo are iaoni bwabwaia. *Natiia* e mainaina ni kabane n roroo baina, wiina ao karani moana.



IDENTIFICATION: *Adult* is superficially similar to Masked Booby but smaller with white tail and sulphur-yellow suffusion about the head, various amounts of dusky-brown in back and wing coverts. Bill blue-gray, face pink, feet bright red. Has a thinner bill than the other boobies with a noticeable angle between the bill and forehead. *Immature* has medium-sooty brown mantle, paler on rest of body, with a diffuse narrow dark band across the breast. Second-year birds have dirty whitish body but retain the diffuse breast band. *Chick* is all white with black wings, bill, and facial skin.

TANGINA: Ngkana e mena ni ngaona, ao tangina, kaanga e kungkung ni bwanaa buaka, ao natina e bwanaa kee ma ni bwanaa buaka naba. Ngkana a ioawa nakoina taian eitei ao tangina, kaanga e tangi n ae e kangai, "kraaak!"



VOICE: At the nest, harsh grunting *gräh gräh gräh gräh* and a raspy *rääääää* chick gives a coarse *ääääääää*. When attacked by frigatebirds, emits a sharp *kraak!*

ANA TAI NI KABWAKABWAKA: E kabwakabwaka inanon te ririki ma angiin te tai inanon namakaina aika Ritemba nakon Tuun. Ngaona e karaoaki man taiani kai aika a katokatokaaki ni kamangaooki ma te uteute ao e a mena ngaona aio ibuakon te aroka ke iaon te kai, n angiin te tai, n te tabo ae e kabikebika ke e boni kona naba ni mena ibuakon te ren, te mao ke te arora, (e bureniwai ae e na mena ngaona iaontano). Bunnatoina bon ti teuana ae e mainaina kaanga te tiaoki karana. E nakon 6 ao te iterana te wiiki imwaa in ae e raure. E a kona ni kiba te mannikiba ae e uareereke aio imwiin 14 te wiiki. Rorona are e a kona n iein iai, e nakon 4 te ririki.

BREEDING BIOLOGY: Nests throughout the year, with peak generally from December-June. Nest is a platform of twigs lined with grasses in a bush or tree (rarely on the ground), primarily in beach heliotrope, but also in salt bush and *Suriana*. Lays one chalky white egg. Incubation takes 6½ weeks. Chick is able to fly after 14 weeks. Age at sexual maturity is about 4 years.

AMWARAKENA: E nakon 75 te katebubua ma ni kanana ae te onouti ao te tewe ao 25 te katebubua ae te riro are e kiikiba; angiin abwakin konana e nakon te abwaki ae 6 nakon 10 te tientemiita abwakiia. E amwarake n ai aron amwaraken te mouakena.



FEEDING: About 75% fish (flying fish and goatfish) and 25% flying squid; most prey items 6-10 cm long. Feeds in similar fashion as Masked Booby.

TIBWATIBWAANA: E reereke ni marawan te Betebeke, Inria ao te Ateranteke ake a kabuebue.

DISTRIBUTION: Widespread in the tropical Pacific, Indian, and Atlantic oceans.

MWAITIIA IAONI KIRITIMATI: A tibwaaki nako, ao a kabwakabwaka ma ni mena ngaonia n taian atimwakoro ake a uareereke ake a tan ake iai iai taiani kai ake a riettaata, ma a aki reke iaon atimwakoro aika "Cook Island" ke "Motu Tabu". E katautauaki mwaitiia bwa e nakon te mwaiti ae 8,000 nakon 12,000.

STATUS ON CHRISTMAS ISLAND: Widespread, nesting on most protected islets with tall shrubs, but not on Cook Island or Motu Tabu. Population estimates have ranged from 8,000-12,000 birds.



TE EITEI ARE E BUBURA

Fregata minor

GREAT FRIGATEBIRD

AEKANA: Te eitei mwaane, te eitei aine ao te eitei are e tuai rangi ni ikawai, a bane ni kaokoro taraakiia ao a aki tootoki ni kaaireruaki ma te eitei are e aki rangi ni bubura. Te *eitei mwaane*, e roroo ni kabane ao e taraaki ni mawaawa aoni baina mai eta. N ana tai ni karekenano ao n tootoka iaoni ngaona, ao e aki tootoki ni katibua te bwai ae kaanga te buua ae mena iaan roroana ae e uraura karana kaanga te katibu. Ngkana, e aki tibu te bwai aio, ao e raba n tenaani buraeniman aika a roroo. Te eitei aine ae e ikawai, e kuri n roroo ni kabane ma e mainaina bwabwaana ao ngkana e mataroo roroana, ao iai te bwai ae e otara ae e mronron ni buru ma ni mataroo karana ni katobibia matana. Te eitei ae e uareereke kaanga e aoranti karan atuna ao e roroo bwabwaana ma ni mainaina birotona. Imwiina ao karan atuna ae e aoranti aio e a manga bitaki nakon te mainaina ao bwabwaana ae e roroo e a manga bitaki nakon naba te mainana; ai ngaia are, imwiin teuana te ririki, ao e a mainaina ni kabane atuna, roroana ao bwabwaana. *Natiia* ngkanne eitei aikai, e mainaina ni kabane ni buru ma ni mataroo karani wiina.

TANGINA: A ewa tein tangini bwanaaia. N ana tai ni karekenano, ao te eitei mwaane e tangi ni kakamaaku, n ai aron ae kaanga e ruru kanoani buuana. N taai tabetai, ao e kona ni manga tangi n aabeebete mai irarikini ngaona; e kona naba n rangi n tang ni bwanaa buaka, ni bwanaa kee ao ma ni karebwerebwei wiina. Ngkana e raroa ma ni ngaona ao e aki kakarongoaa.

ANA TAI NI KABWAKABWAKA: E kabwakabwaka ma ni Maati nakon Okitobwa ni kabutaa te aba. E mena naba n te aba ni kabanea te ririki. Ngaona e karaoaki man tenaani kai aika a katokatokaaki ao e mena ibuakon taian aroka ke te kai ae e uareereke, ma e boni konna naba ni mena ngaona iaontano. E ririikoi taiani kai ibukini ngaona n ana tai ni kibakiba. N ana tai ni kabwakabwaka, ao bon ti teuana bunnatoina ae e mainaina ao e nakon 8 te wiiki imwaain ae e raure te bunnatoi aio. E a kona ni kiba te eitei ae e uareereke aio imwiin 20 te wiiki ma e bon tuai naba n raure raoi mai irouia ana karo ni karokoa e koro te maan ae e nakon 6 te namakaina nakon 1 te ririki. E a bon tibwa kona ni iein te mannikiba aio ngkana e a koro ana ririki ae imarenan 8 ao 10.

AMWARAKENA: Angiini kanana, 80 te katebubua mai iai te ika (te onauti) ao 20 te katebubua mai iai te ri-ro; e boni kaakang naba taiani mannikiba ake a uareereke ake natiia mannikiba ake te korakina. Aron amwarakena, e kateboa wiina iaontari n ana tai ni kikibakiba ao e aki tootoki naba n anaana kaja mannikiba ake te korakina n ana tai ni kibakiba.

TIBWATIBWAANA: E rereke n angiini marawan te Betebeke, Inria ao te Ateranteke Maiaki ake a kabuebue.

MWAITIIA IAONI KIRITIMATI: E tiraua riaon nako Kiritimati ma e aki kabwakabwaka ke ni katuka ngaona n te "Cook Island," Motu Upua ke Motu Tabu. E katautauaki mwaitiia bwa e nakon 10,000 nakon 12,000.



IDENTIFICATION: Ages and sexes all differ. *Adult male* all black with greenish sheen on upper wing. During courtship and nesting, frequently inflates loose patch of red skin on throat like a balloon. When deflated, concealed by black throat feathers. *Adult female* also mostly black but has white breast, becoming grayish on throat; distinctive blue-gray eye-ring. *Juvenile* has entire head rusty orange, usually with full black breast band, white belly. Rust color becomes white, black breast band replaced with white after first molt (*immature* plumage); thus by end of first year has full white head, throat, and breast. *Chick* all white with blue-gray bill.

VOICE: Complex array of calls. In courtship, male gives eerie gurgling whinny. At other times, may give soft *quip* calls near nest; also hoarse cackling, warbling, and bill clapping. Silent away from nesting colony.

BREEDING BIOLOGY: Nests from March-October nearly throughout. Present throughout the year. Nest is crude platform of twigs in shrub or small tree, but also occasionally on ground. Gathers nesting material while in flight. Lays one white egg. Incubation takes 8 weeks. Chick able to fly after 20 weeks but not completely independent of parental care for another 6 months to a year. Does not reach sexual maturity until 8-10 years.

FEEDING: About 80% fish and 20% squid; also chicks of other birds. Feeds by dipping bill just below surface while in flight; also pirates other birds in aerial pursuits.

DISTRIBUTION: Common throughout tropical Pacific, Indian, and South Atlantic oceans.

STATUS ON CHRISTMAS ISLAND: Very common and conspicuous throughout; however, does not nest on Cook Island, Motu Upua, or Motu Tabu. Population estimates have ranged from 10,000-12,000 birds.



TE EITEI ARE E AKI RANGI NI BUBURA

Fregata ariel

LESSER FRIGATEBIRD



AEKANA: E aki tootoki ni kaaireruaka ma te eitei are e bubura. Te *eitei mwaane ae e ikawai*, e roroo ni kabane ao iai te bwai ae e mainaina ni katoa iteran rabwatana irarikin raoi baina. Te *eitei aine ae e ikawai*, e mainaina bwabwaana ao e roroo atuna ai uana naba ma roroana. Taian *eitei ake a tuai raoi n rangi ni ikawai* ma ni uareereke a kaniboo taraakiia ma te eitei are e bubura, ma karan atuia are e aoranti, e tokatoka riki, ma n tiku ni maan riki, iai te bwai ae e roroo iaoni bwabwaaia ao a mainaina bwabwaaia mai inano. Te *eitei are e a tibwa raure*, e kaniboo taraakina ma are natin te eitei are e bubura.

TANGINA: E aki kabwarabwaraaki?

ANA TAI NI KABWAKABWAKA: E kabwabwaka n te nanai ae ti teuana man namakaina aika Eberi nakon Okitobwa. Ngaona, e karaoaki man taiani kai aika a katokatokaaki n te buakoako ae e rinano, ni mwaitin te tai ibuakon te arora, ke n tabetai ao e a mena ngaona iaontano. Ti teuana bunnatoina ae e kabwakaaki inanon namwakaina aika Meei nakon Tuurai. E nakon 6 ao te iterana te wiiki imwaain ae e raure ao e aki kiba te mannikiba aio ni karokoa ae e koro 22 te wiiki imwiin raurena. Ngkanne, bon aekan naba te eitei are e bubura, are e a bon aki raure naba mai irouia ana karo inanon te tai ae e maan. E aki ataaki ana tai ae e kona ni iein iai.

AMWARAKENA: E aki ataaki ma tao e na boni kaniboo naba ma amwaraken te eitei are e bubura.

TIBWATIBWAANA: E reereke ao e a manga aki ni marawan te Betebeke, Inria ao te Ateranteke Maiaki.

MWAITIIA IAONI KIRITIMATI: A mwaiti, ma ti teuana aia tabo ni kabwakabwaka bwa te atimwakoro ae e uareereke ae e mena n te nama teuana i nukan raoi te aba. E a tibwa kuneaki ngaona ma ni kuneaki ni kabwakabwaka n 1959. Ana tabo ngkoa ni kabwakabwaka are e mena n rabwatan te aba are e bubura, ai bon akea bwa boni mwii taiani katamwa, ma ngkai e a manga bita ana tabo aio nakon te atimwakoro teuana ae e uakaan ae e mena n te nama i maiakin te nama ae te "Isles Lagoon." Aran te atimwakoro aio, aia atimwakoro eitei, ke "Frigatebird Island." E katautauaki mwaitiia bwa e nakon 10,000 eitei ake a ikawai ma ngkai tao mwaitiia, ai bon iteran te ware ane.



IDENTIFICATION: Often confused with Great Frigatebird. *Adult male* is all black with a small white patch on the side of the body at the base of each wing. *Adult female* has white breast and black hood, including the throat. *Juvenile* and *immature* are very similar to Great Frigatebird, but rust coloring on head is brighter and usually retained longer; partial black breast band, and white lower breast. *Chick* is also similar to Great Frigatebird.

VOICE: Not described?

BREEDING BIOLOGY: Nests in one large colony from April-October. Nest is a platform of twigs in a low bush, usually *Suriana*, or on the ground. Lays one white egg, usually in May-July. Incubation takes 6½ weeks. Chick does not fledge until 22 weeks after hatching, and like the young Great Frigatebird, is dependent on parental care for a lengthy period after fledging. Age at sexual maturity is not known.

FEEDING: Unknown, but probably similar in most respects to the larger Great Frigatebird.

DISTRIBUTION: Found discontinuously in the Pacific, Indian, and South Atlantic oceans.

STATUS ON CHRISTMAS ISLAND: Common, but confined for nesting to one large colony. It was not discovered nesting until 1959. Its original nesting colony on the main island was destroyed by cats, but it soon relocated to a nearby islet now known as "Frigatebird Island" in the lagoon south of Isles Lagoon. The population has been estimated at about 10,000 adult birds but may now be only half that number.



TE KARAKARA

Sterna bergii

GREAT CRESTED TERN



AEKANA: *Ikawaina* ngaia te kabanea ni bubura mai ibuakoia tenaani mannikiba ake utuna, ake te keeu, te tarangongo, te raurau, te io, te mangkiri, ao te matawa. E mataroo kunna mai ieta, e mainaina aan rabwatana ao e roroo taubukin atuna ao iai bwaron taubukina. E baa-booboo karani wiina ao e manga bukina. Ngkana tiaki ana tai ni kabwakabwaka ao e aki rangi n roroo bwarona. Te karakara are e tuai n rangi ni ikawai, e mai buraunin etan rabwatana ma buraena aika a roo taraakia mai tabona. Te karakara ae e a tibwa raure, e kaniboo taraakina ma are e tuai n rangi ni ikawai.

TANGINA: E bwanaa buaka, kaanga te tang ae, “*raak*” ke “*craak*” ae te tang ae e bwanaa kee.

ANA TAI NI KABWAKABWAKA: A titiraua mwaitiia ni kabwakabwaka. E ngae n ae kaanga ti tebo ma iai namwakaina ake e kabwakabwaka iai, a bibitaki ana tai ni kabwakabwaka aikai n te ririki teuana ma teuana inanon ririki aika a mwaiti. Ngaona, kaanga te mwanono ae e aki rangi n nano iaontano n te tabo ae kaanga akea kaai iai n raroa ma te bike. Ti teuana bunnatoina ae e manibinou aona. E nakon 4 te wiiki imwaain ae e raure. Te karara ae e uareereke, e a kona ni kiba imwiin 5 ao te iterana te wiiki. Ana ririki are e kona ni iein iai, e nakon 3 te ririki.

AMWARAKENA: Angiini kanana te ika, te riro ao taiani mwanai aika a uareereke. E aki tootoki ni kiba n tebo rikaaki n anai kanana man te rieta ae iraua te miita rietana.

TIBWATIBWAANA: E reereke ni marawan Inria, te Betebeke Maeao ao te Betebeke Nuka.

MWAITIIA IAONI KIRITIMATI: E aki tootoki ni kabutaa te aba ma e a karako noorakina n te benintura are mai Maiaki-mainiku (South-east Peninsula). Ana tabo ni kabwakabwaka nukan te atimwakoro ae “Cook Island”. E katautauaki mwaitiia bwa e nakon 500 nakon 700.

IDENTIFICATION: *Adult* is the largest of the terns on Christmas Island; medium gray above, white below, with a black crown that forms a shaggy crest posteriorly. Bill yellow. Tail forked. Outside the breeding season, loses much of the black color in the anterior portion of the crown. *Immature* has dark, scaly feather edges on light brownish upperparts. *Chick* has same basic pattern as immature.

VOICE: A very harsh *raak*, a more drawn out *craaak*, and a raspy *kerrak* or *kirreak* are typical.

BREEDING BIOLOGY: Nests in dense colonies. Although it has a distinct nesting period each year, the actual nesting season varies widely over a period of years. Nest is, at most, a shallow scrape on bare ground in sparsely vegetated areas away from the shore. Lays one heavily speckled egg. Incubation takes 4 weeks. Chick is able to fly after 5½ weeks. Age at sexual maturity is about 3 years.

FEEDING: Fish, squid, and small crabs. Usually plunge dives from a few meters up.

DISTRIBUTION: Common throughout the Indian and Western and Central Pacific oceans.

STATUS ON CHRISTMAS ISLAND: Seen regularly throughout most of the island except the South-east Peninsula where it is seen less often. For nesting, however, restricted to the interior of Cook Island. The population has been estimated at 500-700 birds.



TE TARANGONGO

Sterna lunata

GRAY-BACKED TERN

AEKANA: *Ikawaina* e kaniboo ma taraakin te keeu are e kabuta riki aekana ma rabwatana mai ieta e mataroo karana ao e aki roroo. Jaon ramana ao iai te bwai ae e mainaina ae e tiki rikaaki n tein te rain ae e mainaina nako aani matana. E mainaina ngkanne karan aani baina nakon tabonibaina aei ngaia are ngkana ko taraia mai aana, ao ti tebo ma e a taraa ni mainaina ni kabane. Te tarangongo are e tuai raoi n rangi ni ikawai, e rangi n tei ni kaokoro ma te keeu, ma e mai buraunin eta ao e mainaina nano ao a mainaina man roroo karan taboni buraena ake mai akuna ao iaoni baina. Ti tebo tein te tarangongo are e a tibwa raure ma ni bunnatoina ma are e tuai n rangi ni ikawai.



TANGINA: E kaniboo ma tangin te keeu ma e irariki riki ma n aabeebete.

ANA TAI NI KABWAKABWAKA:

E kabwakabwaka ibuakon te nanai ae e tiraua ma ni Maati ni karokoa Tebetembwa ao angia ni kabane mannikiba aikai a kitana te aba imwiin aia tai ni kabwakabwaka ao ni manga oki rikaaki inanon namwakaina aika Ritembwa ao Tianuare. Ngaioia, e mena iaontano n te tabo ae e bikebike ke ae e kiri atibu ae e aki rangi n tiraua te kai iai. Bunnatoina ti teuana ae e rangi ni manibinou taraakina ao ae ti tebo ma karan te tabo are e mena iai. E nakon 4 te wiiki imwaaan ae e raure mai inanon bunnatoina ao e a kona ni kiba imwiin 7 te wiiki. E aki ataaki bwa te rorora ae e kona ni icin iai.

AMWARAKENA: Angiini kanana, 90 te katebubua mai iai te ika ao 10 te katebubua mai iai te riro. Aron amwarakena e kiba n tebo rikaaki ni katebetebea aontari.

TIBWATIBWAANA: E reereke n angiin te Betebeke mai Maeao ao mai Nuka are a kabuebue ao a aki rangi ni kabuebue, ma a aki rangi ni meemena n te tabo ae ti teuana.

MWAITIIA IAONI KIRITIMATI:

E kabwakabwaka n taian atimwakoro ake a uareereke ake a mena n ana mwaake taian nama mai nuka ao a reereke naba, ma e aki rangi n ewa mwaitiia, n te nama ae te "Manulu Lagoon". A boni meemena n te nama aio ni karokoa te tai are e kanakoaki iai ranna ao ni katomaaki ma te aba are e bubura. E katautauaki mwaitiia bwa e nakon 2,500 nakon 10,000.

IDENTIFICATION: *Adult* is similar to the much more common Sooty Tern, but upper parts are gray, not black. White forehead patch extends back as a white line to just posterior of the eye. Underwing white nearly to the feather tips, giving it a much whiter overall appearance from beneath. *Immature* is much different than Sooty, being mostly pale brown above, white below, with fine, scaly black and white edges to the back and wing feathers. *Chick* has same basic pattern as immature.

VOICE: Similar to Sooty Tern but higher-pitched, tinnier.

BREEDING BIOLOGY: Nests in colonies from March-September. Nearly all birds leave the island after the breeding season, returning in December-January. Nest is on bare ground in sand or coral gravel with sparse, low-growing vegetation. Lays one heavily speckled, well camouflaged egg. Incubation takes 4 weeks. Chick is able to fly after 7 weeks. Age at sexual maturity is not known.

FEEDING: About 90% fish and 10% squid. Feeds by plunge diving and dipping at the surface.

DISTRIBUTION:

Found throughout much of the tropical and sub-tropical western and central Pacific, but its distribution is patchy.

STATUS ON CHRISTMAS ISLAND:

Nests on islets in the Central Lagoons area, and to a lesser extent in Manulu Lagoon, where it was once common before water in the lagoon was lowered, thereby connecting most of the islets to the main island. The population has been variously estimated at 2,500-10,000 birds.





TE KEEU

Sterna fuscata

SOOTY TERN



AEKANA: *Ikawaina* e roroo aon rabwatana ao e mainaina aan rabwatana, e mainaina aon atuna mai moa ao e manga bukina. Ngkanne, e mainaina karan aanibaina ao e mataroo karan aani baina ni kiba. *Te keeu are e tuai n rangi ni ikawai*, e tei n roroo ao iai bwaai aika a mai ae kaanga taian iina aika a mena ni baina, e mainaina birotona mai inano ao i aani bukina. *Te keeu are e a tibwa raure*, e buraun ma ni iai bwaai aika roroo iaona ibukini katiteboona ma te tabo are e mena iai.



TANGINA: N ana tai ni kibakiba ibuakon te nanai ae e kabwakabwaka, ao tangina, kaanga e tangi mai bwairina, kaanga e kangai, "*aranarack!*" Tangina aio are e tia n rairaki bwa aongkoa e kangai, "*I a uti!*" bwa are angkoa tangina ni kaotia bwa ngaia te mannikiba temanna ae e kona ni kibakiba i taari ibukin iraua te namwakaina. Ngkana e mena ni ngaona, ao tangin te mannikiba aio, e tangibiti ma n tang mani bwairina.



ANA TAI NI KABWAKABWAKA: Uoua ana tai ni kabwakabwaka bwa teuana man Ritembwa nakoni Maati, ao are teuana, mani Meei nakon Aokati. Imwaain ae a kabwakabwaka mannikiba aikai ao a aki tootoki ni bobootaki i karawa ni kikibakiba n taian nanai aika a tiraua. Ngaioia, te mwanono ae e aki rangi n nano n te bike, ke ibuakon te atama ke ibuakon tenaani baanikai ni mena n te tabo ae e uki, ke iaan taiani buakoako aika a uki aaia ma taian nii. Ti teuana bunnatoina ae e rangi ni manibinou ao e nakon 4 te wiiki imwaain ae e raure. E a kona ni kiba imwiin 8 ao te iterana te wiiki, ao a kona ni iein ngkana e a koro aia ririki ae imarenan 6 nakon 8 te ririki.

AMWARAKENA: Te riro ae e uareereke ao te ika, ae e kaakanna n angiin te tai n te tairiki. E kaniboo amwarakena ma te tarangongo.

TIBWATIBWAANA: E aki tootoki n reke n taiani marawa aika a kabuebue ma e a tia n nooraki bwa e a keeraki ngkai mwaitiia.

MWAITIIA IAONI KIRITIMATI: E katautauaki bwa e nakon te mwaiti ae 25,000,000 iaoni Kiritimati, te ware aio are e katautauaki bwa ngaia te kabanea ni bubura ni mwaiti ibukiiia mannikiba aika tenaani Keeu iaon te aonnaba. Irarikin naba anne, ao e katautauaki mwaitiia aio bwa e a nakon te kuata mwaitiia mannikiban te aonnaba ngkana a bootaki ni kabane. Ma imwiin 30 te ririki, ao e a tia n nooraki te mwaiti aio bwa e keerikaaki nakon te mwaiti ae ti mwakoron te ware ae 25,000,000 aio. Ma, e ngae ngkana e uareereke ana mwaiti nakon 3 nakon 5 te mirion, boni ngaia te kabanea ni bubura mwaitiia iaoni Kiritimati. Ma ngkana e teimatoa ni keekeerikaaki mwaitina n aekan aio, ao e aki aaia ni bane inanon uabwi te ririki. Nimaua ana tabo ae a titiku iai nanaina: Cook Island (ao ai tibwa ngkai, iaoni Motu Tabu), i maeon te kaemba are e bubura ni kaan ma te Kaben Kuuka Outero, i taboni Bariti, ni uakaan ma te marae ae te Aeon Field ao i tabona n te tabo ae e aranaki bwa Maiaki-mainiku (South-east Point). Ana tabo ngkanne ake uoua riki a bibitaki man te ririki teuana nakon teuana. Mannikiba ake a kabwakabwaka irarikin te kaemba are e bubura, a kabwakabwaka ngkoa i tabon te aba ae e aranaki bwa tabona mai Meang-maeao. (North-west Point). Ma imwiin anaanaakiia irouia taani maeka mai Ronton ao Tabakea, ao a tia ni mwaing n raroa riki ni kaea mainiku.

IDENTIFICATION: *Adult* is black above and white below with a white forehead patch that does not extend behind the eye; tail forked. Underside of flight feathers medium to dark gray, contrasting with white underwing coverts. *Immature* is blackish with pale speckling and scaling in the wing; white on lower belly and undertail coverts only. *Chick* is brown with dark mottling for camouflage.

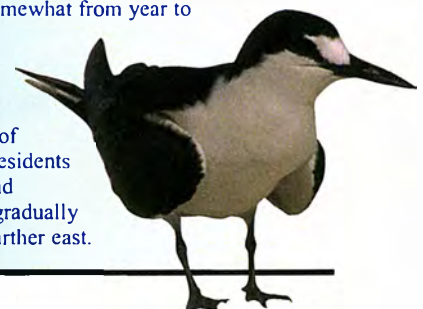
VOICE: In flight at nesting colony, a nasal *aranarack*, often interpreted as *I'm wide awake!* as a reminder of its ability to remain in constant flight at sea for months at a time. At the nest, a shrill, rough, nasal *raaaaaa*.

BREEDING BIOLOGY: Two distinct populations, one nesting December-March, another May-August. Birds congregate above prospective colonies in immense swirling masses for several weeks before settling down to nest. Nest is a slight scrape in sand, cobble, or leaf litter in the open or under open bushes and trees. Lays one heavily speckled egg. Incubation takes 4 weeks. Chick is able to fly in 8½ weeks. Young birds reach sexual maturity in 6-8 years.

FEEDING: Small squid and fish, mostly at night. Feeds in similar fashion as Gray-backed.

DISTRIBUTION: Common to abundant in the tropical oceans worldwide, but numbers have declined drastically in many areas throughout its range.

STATUS ON CHRISTMAS ISLAND: At an estimated 25,000,000 birds, Christmas Island formerly held the largest colony of Sooty Terns in the world, perhaps representing as much as a quarter of the world's population; but in the past 30 years the population has been reduced to only a fraction of its former size. Still, at 3-5 million birds, it remains the most abundant bird on the island. Yet, at its present rate of decline, it will be gone in another two decades. Five main colonies: (1) Cook Island (and recently Motu Tabu), (2) west of Main Camp (Captain Cook Hotel), (3) Paris Peninsula, (4) near Aeon Field, and (5) South-east Point. The locations of the last two colonies vary somewhat from year to year. Birds nesting near Main Camp formerly nested at North-west Point; however, as a result of heavy poaching by residents of nearby London and Tabakea, they have gradually moved farther and farther east.



TE IO

Anous stolidus

BROWN NODDY

AEKANA: *Ikawaina* e bubura riki nakon te keeu ao e roroo burauni kunna ma e ti mainaina toan ramwana ao iai bwarona ae e irengani karana ma karan roroana ae e buraun. Bukina, ti tebo ma tein te iriba ao e rangi n ananau ni kabootauaki ma rabwatana ni kabane. Te *io are e tuai n rangi ni ikawai*, e kaniboo ma te *io are e a ikawai* ma te mainaina are iaon atuna ti te bwai ae e irariki ae e mena n toan ramwana. *Natiia* e buraun rabwatana ni kabane.

TANGINA: E bwanaa buaka n tangi ni kaangai, "*grōw, grōw, grōw*," ao n tabetai e a manga tangi ni kangai, "*cheeooww*".

ANA TAI NI KABWAKABWAKA:

E kabwakabwaka inanon te ririki ma n angiin te tai man Ritembwa nakon Tuun ke Tuurai. Ngaona, te mwanono ae e aki rangi n nano ke e a ti kakinaaki naba i aontano, ma a ewa taai ake e boni kona naba ni karaoa ngaona man taiani kai, baanikai ao koikoin taari, ake e a kamenai n taabo ake akea kain aoia ni mataniwiin te bike. E aki kakabwakabwaka n taian aroka ke taian nii iaoni Kiritimati. Ti teuana bunnatoina ae e mai buraun karana ma ni iai manibinouna aika a turu riki burauniia. E nakon 5 ao te iterana te wiiki imwaain ae e raure, ao e a kona ni kiba imwiin 6 ao te iterana te wiiki imwiin raurena. E a kona ni iein ngkana e koro 4 nakon 5 ana ririki.

AMWARAKENA: Angiini kanana te onauti ao te riro ae e kiikiba ae ti tebo mwaitiia. Aron amwarakena bwa a uananai n amwarake, ni kiba n baatetei rikaaki ni katebetebei kanaia mai iaontari, ao n tabetai e a boni kibarikaaki naba n tiku iaoni birotona iaon taari. Kaakorona ma te keeu, te tarangongo, te kararakara, te raurau, te mangkiri, ao te matawa bwa e aki tootoki ni beti ni katoka kuana iaon taari.

TIBWATIBWAANA: E reereke ni marawan nako te aonnaba ake a kabuebue.

MWAITIIA IAONI KIRITIMATI:

E kakabwakabwaka ni kabutaa te aba ma e ti aki kabwakabwaka n te benintura are mai Maiaki-mainiku, (South-east Peninsula), ao ngkai angiin nanaina a meemena n taian atimwakoro ake a uareereke ake a tan. A katautauaki mwaitiia bwa e nakon 6,000 nakon 10,000.



IDENTIFICATION: *Adult* is larger than Sooty and dark brown throughout except for white forehead and fore-crown that gradually merges with brown hindcrown and nape. Tail wedge-shaped and disproportionately long. *Immature* is similar to adult except that the white cap is reduced to a narrow white area on the forehead. *Chick* is all brown.

VOICE: A harsh, gravelly *grōw grōw grōw grōw grōw* and a very rough *cheeooww*.

BREEDING BIOLOGY: Nests

throughout the year but primarily from December-June or July. Nest is often only a slight depression or scrape on the ground, but in many instances may be a collection of small twigs, leaves, and shells, usually in sparse, matted vegetation or on the upper edge of the beach. Does not nest in bushes or trees on Christmas Island. Lays one pale brown egg lightly to heavily speckled dark brown. Incubation takes 5 weeks. Chick is able to fly at 6 ½ weeks. Sexual maturity is attained in 4-5 years.



FEEDING: Predominantly flying fish and flying squid in about equal parts. Feeds in flocks by hovering and swooping to the water to nab its prey at the surface; sometimes belly-flops into the water. Unlike most terns, rests frequently on the water.

DISTRIBUTION: Found throughout the world's tropical oceans.

STATUS ON CHRISTMAS ISLAND: Nests throughout the island except the South-east Peninsula, with nesting colonies now confined to protected islets. Estimates of the population have been from 6,000-10,000 birds.

TE MANGKIRI

Anous minutus

BLACK NODDY

AEKANA: *Ikawaina*, e kaniboo ma te io ma e uareereke riki man roroo riki karan rabwatana (e roroo, ao e aki buraun) ao e bubura riki mainainan atuna. E abwaabwaki riki ma ni irariki riki wiina ao e koti riki bukina ai ngaia are e tei ni baeranti raoi rabwatana, tiaki aekan te io are e anaanau bukina ma ni koti riki wiina. Te mangkiri are e tuai n rangi ni ikawai, e kaniboo ma te ikawai ma e rangi n terenako mainainan atuna mani kamouna ae e roroo. *Natiia*, e roroo ni kabane ma ramwana ae e mainaina.

TANGINA: N ana tai ni kibakiba, ao e tangi ni kaberooro kaanga, "t.t.t.t.t, ke the-eh-eh-eh" e tang naba n aekan tangin te biraoki ae kaangai, "kikrrrrrr". Ngkana e mena ni ngaona ao e tangi n rietaata tangina ma ni bwanaa kee, ni kaangai, "reeeeee".

ANA TAI NI KABWAKABWAKA: Ana tai ni kabwakabwaka mani Beberuare nakoni Maati ke Tuurai. E kaokoro ngkanne ma te io iaan ae e mena ngaona n taiani kai ao ni buakoako ma aroka ake a mena iaon te bike, ao iaon Motu Tabu, e mena ngaona n te Buka. Ngaona, e karaoaki man taiani kai, uteute, ueeni kain aon te bike ao mwakoro n ane aika a uareereke ake a katukaki ni mwaangan te kai, ao ngaona aio, e a kanimwaki n timantinaki n nakotaarina. Ti teuana bunnatoina ae e mai buraun ao e mainibinou aona ma ni iai bwaai aika a tiki iaona aika a buraun. E nakon 5 te wiiki imwaain ae e raure, ao e a kona ni kiba imwiin 5 ao te iterana te wiiki. Te mangkiri ae e uareereke aio, e a kona ni iein imwiini koron 3 ana ririki.

AMWARAKENA: E kaniboo amwarakena ma te io ma e ewa riki kanana te ika nakon te riro, tao e nakon teniua te tai mwaitin kanana te ika ni kabotauaki ma te riro. Kanana aikai, abwakiia, 1 nakon 5 te tientemiita ao te mannikiba aio e aki tootoki riki ni kakan amwarake inanon tekatekana iaon taari ngkana e kabotauaki ma te io.

TIBWATIBWAANA: E kuneki ni marawan nakon te Betebeke ao te Ateranteke ake a kabuebue ma e aki rereke ni marawan Inria.

MWAITIIA IAONI KIRITIMATI: E kakabwakabwaka iaon atimwakoro aika "Cook Island, Motu Tabu ao Motu Upua" ao n atimwakoro ake a uareereke ake a mena n taian nama mai nuka, ma akea n te benintura are mai Maiaki-mainiku, (South-east Peninsula). E katautauaki mwaitiia bwa e nakon 10,000 nakon 20,000.



IDENTIFICATION: *Adult* is similar to Brown Noddy but smaller, darker (blackish, not brown), and with a more extensive white cap. Bill noticeably longer and thinner and tail shorter, giving the bird more balanced body proportions than the longer-tailed, shorter billed Brown. *Immature* is similar to adult but with white cap sharply set off from black nape. *Chick* is all black with white forecrown.

VOICE: In flight, a ratchet-like t-t-t-t-t or teh-eh-eh-eh-eh. Also, a frog-like kik-krrrrr. At the nest, a shrill, hoarse reeeeee.

BREEDING BIOLOGY: season primarily March-July. Unlike the preceding, nests exclusively in trees, usually in beach heliotrope, and on Motu Tabu, in puka tea. Nest constructed of twigs, grasses, beach heliotrope flower stalks, and small pieces of coral in the fork of a horizontal branch; cemented together with excrement. Lays one pale brown egg speckled and streaked with dark brown. Incubation takes 5 weeks. Chick is able to fly after 5½ weeks. Young take about 3 years to reach sexual maturity.

FEEDING: Foods and feeding habits are similar to Brown Noddy, but eats about three times as much fish as squid, typically in the 1-5 cm range, and is more inclined than Brown to feed while sitting on the water.

DISTRIBUTION: Found throughout the tropical Pacific and Atlantic oceans, but absent from the Indian Ocean.

STATUS ON CHRISTMAS ISLAND: Nests on Cook Island, Motu Tabu, Motu Upua, and islets in the Central Lagoons, but absent from South-east Peninsula. Estimates have ranged from 10,000-20,000 birds.

TE RAURAU

Procelsterna cerulea

BLUE-GRAY NODDY

AEKANA: *Ikawaina*, e uareereke ni buru ni mataroo karan rabwatana (ngaia te kabanea ni uareereke ibuakoia utuna n te aonnaba), e koti ma ni uareereke n tei n neiran wiina ao e manga bukina. A takaroro kanoani matana ae e rangi n otara iaon atuna ae e mataroo ni mai, karana. Te raurau are *e tuai n rangi ni ikawai* ao are e a *tibwa* raure ma ni bunnatoina, ti tebo tangina ma are e ikawai.

TANGINA: Ngkana e mena ni ngaona, ao iai tangina ae e kaokoro ae kaanga e tang mai bwairina ni kabanean tangina, ni kaangai, "*ruurrrrr*" ke "*ru-errr*," ma ni kamatoaa nenena n te kauoua n tirebware.

ANA TAI NI KABWAKABWAKA:

E kabwakabwaka n taai nako inanon te ririki ma angiin te tai man Aokati nakon Ritembwa. Ngaona kaanga te bwai ae e a kakinaaki naba iaontano n te kabikebika ke ibuakon tenaani kai aika a maareare, n angin te tai, ni boton taiani bwariko n uteute ke ni boton taiani kai aika a tikirake. E karaoa naba ngaona n taiani mwanono ibuakon taian atibu. E raure imwaain koron 5 te wiiki. Ti teuana bunnatoina are e manibinou taraakina. E nakon iaan 5 te wiiki imwaain ae e raure mani bunnatoina. E aki ataaki bwa te rorora imwaain ae e kona ni kiba ao e aki ataaki naba bwa te rorora imwaain ae e kona ni iein.

AMWARAKENA: Taiani ika aika uareereke (e nakon 50 nakon 60 te katebubua ma ni kanana), utun nako taiani man ake a mamatoa boraia, n aron te mwanai (crustaceans) ao manin taari ake a uareereke. Aron amwarakena, e kiba n titiku rikaaki riaontari ma ni katebetebei kanana. E aki rangi ni mamaekana marawa.

TIBWATIBWAANA: E reereke ni marawan te Betebeke mai Macao ao mai Nuka ake a kabuebue.

MWAITIIA IAONI KIRITIMATI:

Kaanga a boni mwaiti ao a roko n taabo ni kabane. A kakabwakabwaka n atimwakoro ake a uareereke ake a mena inanon te nama are mai nuka, ao ake a mena n te "Manulu Lagoon" (anne ngkekei?), ao a boni mena naba n atimwakoro aika te Cook Island, Motu Tabu ao Motu Upua. E katautauaki mwaitiia bwa e nakon 2,500 nakon 5,000.



IDENTIFICATION: *Adult* is a small, all bluish-gray tern (the smallest tern in the world) with short, needle-like bill and notched tail. Beady black eye set off in uniformly pale gray head is distinctive. *Immature* and chick resemble adult.

VOICE: At the nest, a distinctive, nasal *ruurrrrr* or *ru-errr* with emphasis on the second syllable.

BREEDING BIOLOGY: Nests year round, but primarily from August-December. Nest is a small scrape in the sand or sparse vegetation, usually at the base of a clump of grass or other erect vegetation; also nests in crevices in coral rubble. Lays one finely speckled egg. Incubation takes just under 5 weeks. It is not known how long it takes before the chick is old enough to fly, nor how long it takes for the young to reach sexual maturity.

FEEDING: Tiny fish (50-60%), crustaceans, and small sea striders (insects). Feeds by dipping and pattering at the surface. Less pelagic than other noddies.

DISTRIBUTION: Found throughout much of the tropical western and central Pacific Ocean.

STATUS ON CHRISTMAS ISLAND: Fairly common and widespread, nesting on many islets within the Central Lagoons, Manulu Lagoon (formerly?), and on Cook Island, Motu Tabu, and Motu Upua. The population has been estimated at 2,500-5,000 birds.



TE MATAWA

Gynis alba

WHITE TERN

AEKANA: *Ikawaina*, e tei n okoro ni uareereke ni mainaina rabwatana ni kabane ma matana ae e rooro ao wiina ae e buru n rooro n tei n neiran. Te matawa are e tuai n rangi ni ikawai, e kaniboo taraakina ma are e ikawai ma iai bwaai aika a matabareka ake a mena iaoni baina. *Natina*, e mai buraun, kaanga karan te bike ao iai bwaai aika a rooro iaona.

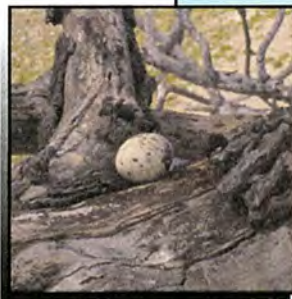
TANGINA: Ngkana e mena ni ngaona, ao e tang ni kaanga, "*yak, yak, yak, yak,*" ao tangina aio, e nene n te moantai ao e a keekeerikaaki naba ma ni karaaurau, e kona naba n tang n aamarau, ni kaanga, "*tonk, tonk, tonk,*" ke e kona naba n rangi n tangi n rietaata ma ni irariki.

ANA TAI NI KABWAKABWAKA: E kabwakabwaka n rinanon nako te ririki, kaanga akea raoni ana tai. Akea ngaona, ma e a ti kabwakabwaka naba iaoni mwangan te kai ke ni bwangabwangan te kai ke te aroka ae e bubura. Bunnatoina e rangi n tei ni manibinou. Ma, ngkana iai ngaon te mangkiri are e aki kabonganaa ao e boni kona naba ni kabwakabwaka iai. E nakon 5 tabun te wiiki imwaain ae e raure ma ni bunnatoina ao e a konaa ni kiba te mannikiba ae e uareereke aio, 7 te wiiki imwiin raurena. E nakon 5 ana ririki imwaain ae e kona ni iein.

AMWARAKENA: Taian ika aika a uareereke ao te riro, ao ti tebo mwaitini kanana te ika ma te riro ma e a bon anaa naba are e konaa n anaia. N angiin te tai e amwaamwarake ni kaani ma eeta ao aron amwarakena, e katebetebei kanana inanon ana tai ni kikibakiba riaontari. E kaokoro ma mannikiba ake utuna bwa e kona ni uotii taiani ika tabeman ni bangaki inanoni wiina n te tai ae ti teuana.

TIBWATIBWAANA: A reereke ni marawan te Betebeke, Inria ao te Ateranteke Maiaki.

MWAITIIA IAONI KIRITIMATI: A boni mwaiti. E kakabwakabwaka ibuakon te nanai ae e uareereke n te Cook Island, Motu Tabu ao Motu Upua ao iaon taian atimwakoro ake a uareereke ake a mena ni mwaken te nama are mai nuka. E katautauaki mwaitiia bwa e nakon 2,000 nakon 8,000.



IDENTIFICATION: *Adult* is a distinctive, small, all white tern with a black eye and needle-like blue-based black bill. *Immature* is like adult but with dusky markings in wing. *Chick* is pale sandy brown with fine black mottling.

VOICE: In the vicinity of its nest, a rough *yak yak yak yak yak*, dropping in pitch and slowing slightly; also a soft *tonk tonk tonk* and a high-pitched, thin *seet*.

BREEDING BIOLOGY: Nests throughout the year with no clear peak. Does not build a nest; instead lays its single heavily speckled egg on a bare branch or notch in a tree or large shrub. However, it will use old nests of the Black Noddy when available. Incubation takes just over 5 weeks. Chick is able to fly after 7 weeks. Young take 5 years to reach sexual maturity.

FEEDING: Small fish and squid in about equal parts, but will take whatever is available. Feeds mostly inshore by picking from the surface while hovering. Unlike other terns, can carry several fish at a time cross-wise in its bill.

DISTRIBUTION: Found throughout much of the Pacific, Indian, and South Atlantic oceans.

STATUS ON CHRISTMAS ISLAND: Fairly common. Nests in relatively small groups on Cook Island, Motu Tabu, and Motu Upua, and on many islets in the Central Lagoons area. Population estimates have ranged from 2,000-8,000 birds.

TE BOKIKOKIKO

Acrocephalus aequinoctialis

AEKANA: Kaanga e buraun ni mataroo rabwataia ni kabane ao e mai taboni baina ao e mai naba taboni bukina. E rangi ni kai kinaaki kiona ngkai bon ti ngaia mannikiban te aba ae boni kain Kiritimati.

TANGINA: E tang ni bwanaa buaka, kaanga e kangai, "chō" ke e kangai, "cheet-cheet;" ke ti tebo ma ngkana e karaua n rangi ni kabararia.

ANA TAI NI KABWAKABWAKA: E kakabwakabwaka n tain te kakarau. Aroni ngaona, kaanga tein te mwangko ae e karaoaki man taian uteute, kunin te nii ao taian ewanin ake e a kamenai n oini mwaangan taiani kai aika a ririeta ke te nii. 3 nakon 4 bunnatoia aika a mataroo ke a mata mawaawa ma iai bwaai aika a buraun ni mronron ni mena mai taboia. E aki ataaki bwa a raure nningai mai inanon bunnatoia. Natiiia, akea buraeia ao a matakii ni moan raureia, ma a waekoa ni matairiki ma n reke buraeia. E aki ataaki bwa te rorora mannikiba aikai imwaain ae a kona ni kiba ao e aki ataaki naba bwa te rorora imwaain ae a kona ni iein. Ma te katautau bwa a boni kona ni iein, ni koron teuana aia ririki.

AMWARAKENA: E kaakang taiani man aika a uareereke ma taiani baanikai, kain aroka ao taiani uee.

TIBWATIBWAANA: A ti kuukuneaki iaon Teraina ao iaoni Kiritimati. Ngkekei, ao a kuukuneaki naba iaon Tabuaeran.

MWAITIIA IAONI KIRITIMATI: A kuukuneaki n angiiin tabo iaon te aba, ma akea n taabo ake n te benintura are mai Maiaki-mainiku. Mwaitiia, ti tebo ma a aki rootaki irouia katamwa ake a tia ni kaabung n te aba imwiin te Kauoua ni Buaka n te Aonnaba te kimoa noror. E katautauaki mwaitiia mannikiba aikai bwa e nakon 300 nakon 400 mwaitiia iaon te aba. Aio are te katautau are n te 1960 tabun ao n te 1970 tabun, ma te katautau aio, kaanga e bon rangi n tei ni uareereke. Tao bon etina ao tao mwaitiia, e nakon te mwaiti ae 1,000.

BOKIKOKIKO OR LINE ISLANDS WARBLER

IDENTIFICATION: Rather uniform drab brownish-gray with pale edges to wing feathers and pale tail tip. As the only native landbird on the island, it is unmistakable.

VOICE: A harsh *bokeet*; a rough *chō*; a dry *chā cheet-cheet*; occasionally, more prolonged chatter.

BREEDING BIOLOGY: Nests during the rainy season. Builds a cup nest of grasses, bark, and coconut husk fibers at the base of a cluster of branches in a tall shrub or tree. Lays 3-4 pale gray to greenish eggs with dark brown spots concentrated at the large end. Incubation period is not known. Nestlings are unfeathered and blind at hatching, but gain eyesight and down feathers rapidly. Fledging period and age at sexual maturity are unknown, but the latter is probably one year.

FEEDING: Gleans tiny insects from leaves, stems, and flowers.

DISTRIBUTION: Found only on Washington and Christmas islands and formerly on Fanning.

STATUS ON CHRISTMAS ISLAND: Found in suitable habitat over much of the island, but absent from most of South-east Peninsula. Numbers do not seem to have suffered at the hand of cats, which have proliferated on the island since at least World War II, but black rats, notorious tree-climbers, could pose a serious threat. Estimates of 300-400 birds island-wide in the 1960s and 1970s are probably low; it may be closer to 1,000.



TAIBORA 1: TAAI NI KABWAKABWAKA

Rinanin mannikiba	Aia tai ni kabwakabwaka *	Mwaitini bunnatoi	Maaniia imwaain rauren te bunnatoi	Roroia imwaaini kibaia	Roroia n tain aia kabwaka-bwaka
Te Ruru	Nob-Tian; Ebe-Tuun	1	53	?	?
Te Tangiuoua	Meei-Tuurai	1	53	109	4
Te Tinebu	Ni kabanea bongin te ririki	1	53	96	?
Te Nna	Tuun-Nob	1	51	72	8
Te Bwebwe ni Marawa	Aok-Ritembwa	1	?	?	?
Te Taake	Tuun-Nob	1	42	89	2-3
Te Mouakena	Ni kabanea bongin te ririki	1-2	42	118	4
Te Kibwi	Ni kabanea bongin te ririki ?	1-4	43	95	4
Te Koota	Ni kabanea bongin te ririki	1	45	98	4
Te Eitei	Eberi-Tuurai	1	55	140	8-10
Te Eitei (Uarereke)	Meei-Tuurai	1	45	154	?
Te Karakara	Eberi-Tuurai	1	28	39	3
Te Tarangongo	Maati-Aokati	1	29	49	?
Te Keeu	Meei-Tuurai; Rit-Beb	1	28	60	7
Te Io	Rit-Tuun	1	35	45	4-5
Te Mangkiri	Maati-Tuun	1	35	39	3
Te Raurau	Aok-Ritembwa	1	34	?	?
Te Matawa	Ni kabanea bongin te ririki	1	36	49	5
Te Bokikokiko	Taai ni kakarau	3-4	?	?	1?
*Awereti					

TAIBORA 2: AEKANI NGAOIA

Tibiitiiti	Ngaoya ao aia Tabo
Te Ruru	Te mwanono te bwanga ae aki rangin nano: angiin te tai e mena iaan taian aroka aika a mmatenten baaia iaaia
Te Tangiuoua	Bwangana e mena n taabo aika a maareare kaai iai ao e korakora mwaitiia iai
Te Tinebu	Te mwanono ke te bwanga ae e aki rangin nano; angiin te tai e mena iaan taian aroka aika a mmaten ten baaia iaaia
Te Nna	Te bwanga ke te mwanono ae nano n taabo aika a karako ke a rangi ni mwaiti kaai iai
Te Bwebwe ni Marawa	Te bwanga ae e aki rangin nano ke te mwanono ae e nano ibuakon tenaani kai aika a mmatenten baaia iaaia ke n te bwangabwanga
Te Taake	Te keniken ae e kataneaki iaan te aroka
Te Mouakena	Te keniken ae e kataneaki n te tabo ae e uki ni kaani ma aroka
Te Kibwi	Tabonongaongao ao baanikai iaontano n te tabo ae e uki
Te Koota	Tabonongaongao ibuakon te buakoako ke n te kai
Te Eitei	Tabonongaongao ae mareare n te buakoako ke iaontano
Te Eitei (Uarereke)	Tabonongaongao aika maareare n te buakoako
Te Karakara	Te keniken ae e kataneaki n te tabo ae a karako aroka iai; e tira mwaitiia
Te Tarangongo	Te keniken ae e kataneaki ibuakon te atama n te tabo ae a karoko iai kaai
Te Keeu	Te keniken ae e kataneaki n te tabo ae e karako kaina ke n te bikebike
Te Io	Tabonongaongao ao baanikai iaontano ke akea ngaona
Te Mangkiri	Tabonongaongao, mwakoron uee, taian uteute, atiibun te ane ake a bane ni kanimwaki ni butaena
Te Raurau	Akea; iaontano n te bikebike ke n te tabo ae e karako kaina, ke ibuakon atiibun te ane
Te Matawa	Akea; mwaangan te kai ae e bangaki
Te Bokikokiko	Te mwangko ae e karaoaki man te uteute ao mwakoron taian aroka; mwanokani mwaanga n te buakoako ke te kai

TABLE 1: BREEDING CYCLE

Species	Laying Period*	Number of Eggs Laid	Incubation (days)*	Fledging (days)*	Age at 1st Breeding* (Years)
Phoenix Petrel	Nov-Jan; Apr-June	1	53	?	?
Wedge-tailed Shearwater	May-July	1	53	109	4
Christmas Shearwater	Year Round	1	53	96	?
Audubon's Shearwater	June-Nov	1	51	72	8
Polynesian Storm-Petrel	Aug-Dec	1	?	?	?
Red-tailed Tropicbird	June-Nov	1	42	89	2-3
Masked Booby	Year Round	1-2	42	118	4
Brown Booby	Year Round?	1-4	43	95	4
Red-footed Booby	Year Round	1	45	98	4
Great Frigatebird	Apr-July	1	55	140	8-10
Lesser Frigatebird	May-July	1	45	154	?
Great Crested Tern	Apr-July	1	28	39	3
Gray-backed Tern	Mar-Aug	1	29	49	?
Sooty Tern	May-July; Dec-Feb	1	28	60	7
Brown Noddy	Dec-June	1	35	45	4-5
Black Noddy	Mar-June	1	35	39	3
Blue-gray Noddy	Aug-Dec	1	34	?	?
White Tern	Year Round	1	36	49	5
Bokikokiko	Rainy Season	3-4	?	?	1?
* Average					

TABLE 2: NEST TYPE

Species	Nest Construction and Location
Phoenix Petrel	Depression or shallow burrow usually under matted vegetation
Wedge-tailed Shearwater	Burrow in sparsely vegetated areas; dense colonies
Christmas Shearwater	Depression or shallow burrow usually under matted vegetation
Audubon's Shearwater	Burrow or deep depression in sparse to dense vegetation
Polynesian Storm-Petrel	Shallow burrow or deep depression in matted vegetation, or in crevice
Red-tailed Tropicbird	Slight scrape under bush
Masked Booby	Slight scrape in open, usually adjacent to bush
Brown Booby	Twigs & leaves on ground in the open
Red-footed Booby	Loose construction of twigs in bush or tree
Great Frigatebird	Flimsy construction of twigs in bush or on the ground
Lesser Frigatebird	Flimsy construction of twigs in bush
Great Crested Tern	Slight scrape in sparse vegetation; dense colonies
Gray-backed Tern	Slight scrape in coral gravel with sparse vegetation
Sooty Tern	Slight scrape in sparse vegetation or sand
Brown Noddy	Twigs & leaves on ground, or no nest
Black Noddy	Twigs, flower parts, grasses, coral in tree, cemented with excrement.
Blue-gray Noddy	None; on ground in sand, sparse vegetation, coral rubble
White Tern	None; horizontal tree limb
Bokikokiko	Deep cup of grasses and plant fibers; base of branches in bush or tree

Irua Man Te Aketeke

VISITORS FROM THE ARCTIC

TE KUN

Pluvialis fulva

PACIFIC GOLDEN-PLOVER

AEKANA: N ana tai ni kabwakabwaka, ao e rangi ni kai kinaaki ma ni bwarona (inanoni Meei) ao karan aona ae e roroo ma ni baaboobo, ao karan aana ae e roroo ni kabane. Ngkana tiaki ana tai ni kabwakabwaka (man Aokati nakon Eberi), ao e aki rangi n tei n otara, ao karana, kaanga e buraun ni mataroo aona ao e maii riki karan aan rabwatana. Ma e bon terenako mai ibuakioia raona ni mannikiba iaan taraakin rabwatana ae e tei ni uareereke ma wiina ae e koti ma ni kabubu tabona.

TANGINA: E tangi ni kanimomoi, e beebete ao e itiaki.

TIBWATIBWAANA: E kakabwakabwaka n te aketeke ao imwiina ao e kiba nako naba nako maiaki ni kaea aban te Betebeke ao aaba ni uakaan ma taari iaon Atia meang, Aotiteria ao Nutiran.

MWAITIHA IAONI KIRITIMATI: Bon te irua ae e aki tootoki n rooroko iaoni Kiritimati rinanon te ririki; ma e a manga kitana te aba inanon Tuun ao n Tuurai ngkana e nako ni kabwakabwaka n te Aketeke.



IDENTIFICATION: Unmistakable in breeding plumage (May) with its finely flecked black and gold back and all black underparts. In non-breeding plumage (August-April), it is much less distinctive; mottled brownish-gray above, paler below. However, its small, compact size and short, round-tipped bill distinguish it from the other shorebirds.

VOICE: A soft, clear, whistled *per-it*.

DISTRIBUTION: Nests in the Arctic and migrates south to the islands of the Pacific and along the mainland coasts of southern Asia, Australia, and New Zealand.

STATUS ON CHRISTMAS ISLAND: Common visitor nearly throughout the year; however, absent (or nearly so) in June and July when it is on its Arctic breeding grounds.

TE KIRIRI

Heteroscelus incanus

WANDERING TATTLER

AEKANA: E mataroo aon rabwatana ao kaanga boni buburan te kun. N ana tai ni kabwakabwaka, e mataroo ma ni mainaina aan rabwatana, ma ngkana e aki kabwakabwaka, (are bon angiin te ririki) ao akea taiani bwai iaon rabwatana mai aana.

TANGINA: E rangi ni itiaki bwanana kaanga tangin taiani beero ae kaangai, "*klee, klee, klee, klee*".

TIBWATIBWAANA: E kakabwakabwaka n te Aketeke ao imwiina ao e a kiba nako ni kakioia maeon Amerika meang ao ni kakioia angiin aban te Betebeke.

MWAITIHA IAONI KIRITIMATI: Kaanga e boni mwaiti inanon te ririki, ma akea inanon Tuun ao Tuurai.



IDENTIFICATION: Lead-gray shorebird about the size of a Golden-Plover. In breeding plumage, it has fine gray and white barring underneath, but in non-breeding plumage (most of the year) the underparts are unbarred.

VOICE: A clear, ringing *klee klee klee klee*.

DISTRIBUTION: Nests in the Arctic and migrates to the western coast of North America and the islands of most of the Pacific Ocean.

STATUS ON CHRISTMAS ISLAND: Fairly common throughout most of the year, but absent in June and July.

TE KEWE

Numenius tahitiensis

BRISTLE-THIGHED CURLEW

AEKANA: Ngaia te kabanea ni buubura mai ibuakoaia mannikibani mataniwin te aba, e roroo ma ni maii buraun rabwatana ma ni mainaina birotona ma n abwabwaki ma ni bwaouarikaaki wiina. E aoranti maii aona ma bukina ma ni kona n nooraki inanoni kibana.

TANGINA: E tangi ni kanimomoi ni moa man ae e aamarau ni karokoa ae e nene n aron ae e kangai, "*pe-a-rit*" ao imwiina kaanga e nuu ma n aki itiaki - "*perwit*".

TIBWATIBWAANA: E ti meemena n taabo tabeua, e kakabwakabwaka i nukan Aratika Maeao ao imwiina e a manga kiba nako ni kawarii aban te Betebeke nuka imwiin ana tai ni kabwakabwaka ae e aki rangi ni maan.

MWAITIHA IAONI KIRITIMATI: E aki tootoki ni kaakawara Kiritimati man Aokati nakoni Meei.



IDENTIFICATION: Largest shorebird on the island, mottled dark and light brown with white belly and long curved bill. Orange-buff rump and tail conspicuous in flight.

VOICE: A soft to rather loud whistled *pe-a-rit* and a more subdued, slightly rough *perwit*.

DISTRIBUTION: This species has a very restricted range, nesting only in western interior Alaska, and migrating to islands in the central Pacific outside its short breeding season.

STATUS ON CHRISTMAS ISLAND: Fairly common winter visitor from August to May. Christmas Island is one of the best places in the world to see this species.

TE KITIBWA

Arenaria interpres

RUDDY TURNSTONE

AEKANA: Mannikibani mataniwin te aba ae e uareereke ma ni motomoto ma n roroo buraun ao ni mainaina rabwatana ao rangana aika a aoranti ni uraura. Karana n ana tai ni kabwakabwaka, e terenako man otara ae e roroo ma ni mainaina moan rabwatana ao e aoranti ma ni buraun nuukana. Ngkana tiaki ana tai ni kabwakabwaka, ao karana e aki rangi n otara ao e mataroo ma ni mainaina moan rabwatana ao e buraun nukana.

TANGINA: E bwanaa beeti, kaanga ti tebo ma e kangkanta te bwai teuana ao imwiina te tang ae e kangai, "*tuk*" ae e tata ma ni itiaki.

TIBWATIBWAANA: E kakabwakabwaka n te Aketeke ao imwiina ao e a kiba nako ni kawarii angiini mataniwiin aaba ma abamwakoro n te aonnaba.

MWAITIHA IAONI KIRITIMATI: E rooroko bwa iruan te winta ngaia man Tuurai nakoni Meei, ao e aki rangi n nonooraki n aron te kun, te kiriri ao te kewe.



IDENTIFICATION: Small plump black, brown, and white shorebird with orange-red legs. In breeding plumage, distinctive mosaic of black and white foreparts and rich orangish-brown back. In non-breeding plumage, less distinctive mosaic of dusky gray and white foreparts and brown back.

VOICE: Oily or guttural *chew* and a rapid, dry string of *tuk* notes.

DISTRIBUTION: Breeds in the Arctic and migrates to nearly all mainland coasts and islands worldwide.

STATUS ON CHRISTMAS ISLAND: Winter visitor from July to May; less common than the preceding three.

Mannikiba Ake Tiaki Manin Kiritimati

NON-NATIVE SPECIES

TAOBE, BITIN, RUBE

Columba liviat

ROCK DOVE OR FERAL PIGEON

Mannikiba aikai a mwaiti aekani kuniia; n angiin te tai a mataroo ma n roroo ma iai bwaai aika a mainaina iaioia. A moanna n ewa ngkai taiani bitin iaon Ronton ao iaon naba Banana, tao a bon reke rokoia ikai bwa a toka iaoni kaibuke. A kaakang taiani koraa.

Feral pigeons come in a variety of patterns, mostly various shades of gray with black and white markings. Small populations of pigeons, which probably arrived on supply ships, have become established in London and more recently in the village of Banana. They eat seeds.

TE KURA

Vini kuhlii

KUHL'S (OR SCARLET-BREASTED) LORIKEET

Te mannikiba aio utun te "parrot" ao karana e uraura ma ni kiriin, e beeboro karan roroana, e bwakerikaaki wiina ao e waikakang bukina, ao bon te mannikiba ae e uareereke. Mannikiba aikai ake a aki tootoki ni uouotaki mai Teraina ao Tabuaeran, ma a bon aki kona n teimatoa maiuia. A uotaki nako Teraina ao Tabuaeran man te abamwakoro ae Rimatara 300 tabun te ririki n nako.

A small red and green parrot with a purple nape, hooked beak, and pointed tail. Occasional individuals or groups of birds are brought here from Washington and Fanning islands, but they do not survive long. Introduced to Washington and Fanning from its native Rimatara Island more than 300 years ago.

Mannikiba Ake A Bua Man Te Aonnaba

EXTIRPATED SPECIES

Prosobonia cancellata

TUAMOTU SANDPIPER

Te mannikiba ae mannikiban mataniwin te aba ae e uareereke ma ni buraun rabwatana ao e kimototo ma n eti wiina ao a uareereke rangana. E reke ngkoa iaoni Kiritimati, ma ai bon akea ngkai inanon iraua te ririki n nako, (e aki ataaki bwa a bua nningai). Ngkai, e a bon ti reereke te mannikiba aio n abamwakoro tabeua n te "Tuamotu Archipelago," ake akea iai katamwa ma kimoa, ao ngkai e a bon reke n te kangaanga, bwa e kona ni bua matana man te aonnaba.

A small mottled brown shorebird with a short, straight bill and moderately short legs. Once found on Christmas Island, it disappeared years ago (no one knows exactly when). It is now found only on a few small, rat- and cat-free islands in the Tuamotu Archipelago, where it is threatened with extinction.

Araia Tibiitiiti Ake A Kabonganaaki Inanon Te Boki Aio

SPECIES NAMES FOR SPECIES MENTIONED IN THE TEXT

KIRIBATI (I-KIRIBATI)	INGIRITI (ENGLISH)	ARANA N TIAENTI (SCIENTIFIC)
MAAN AKE A KAMMAMMA (Mammals)		
Te kimoa roroo	black rat	<i>Rattus rattus</i>
Te kimoa Noruee	Norway rat	<i>Rattus norvegicus</i>
Te kimoa ni Borenetia	Polynesian rat	<i>Rattus exulans</i>
IIKA (Fishes)		
Te ikari	bonefish	<i>Albulidae</i>
Te onauti	flying fish	<i>Exocoetidae</i>
Te maebo, te tewe	goatfish	<i>Mullidae</i>
Te kimokimo, te tawatawa	mackerel scad and jacks	<i>Carangidae</i>
Te ku, te ta	squirrelfish	<i>Holocentridae</i>
Te Baewe, te baiura, te ingimea	tuna	<i>Scombridae</i>
MAAN AKE AKEA RIIA (Invertebrates)		
Te riro	flying squid	<i>Ommastrephidae</i>
KAAI (Plants)		
Te arora	[none]	<i>Suriana maritima</i>
Te buka	puka tea	<i>Pisonia grandis</i>
Te mao	salt bush	<i>Scaevola taccada</i>
Te ren	beach heliotrope	<i>Messerschmidia argentea</i>
Te uteute	grass	<i>Lepturus repens</i>

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KINAAKIN TAIAN TAMNEI (KEY TO PHOTOGRAPHS)

Tamnei ni kabanea a raweaki iroun Lee Jones ti ngkana a kaotaki bwa e raweaki te tamnei iroun riki temanna (All photographs by Lee Jones unless otherwise credited.)

Tamnein tinanikun te boki:

Matawa (Mark Rauzon)

Ruru (it. 28)

- a. Ikawai ae e kiba
- b. Ikawai ma bunnato (Michael Phillips)
- c. Bunniman

Tanguoua (it. 29)

- a. Bunniman (Michael Phillips)
- b. Ikawai ni bwangana
- c. Ikawai itinanikuni bwangana

Tinebu (it. 30)

- a. Bunnato
- b. Bunniman
- c. Ikawai uoman (Mark Rauzon)

Nna (it. 31)

- a. Ikawai ma bunnato
- b. Bunniman
- c. Ikawai ma bunniman iaani baina

Bwebwe ni Marawa (it. 32)

- a. Ikawai ma bunnato
- b. Bunniman (Michael Phillips)

Taake (it. 33)

- a. Bunniman ikawai riki
- b. Bunniman ataei
- c. Ikawai iaoni ngaona

Mouakena (it. 34)

- a. Ikawai uoman
- b. Ataei
- c. Ikawai ma bunnato
- d. Bunniman

Kibwi (it. 35)

- a. Ikawai ae e kiba
- b. Ikawai iaoni ngaona
- c. Bunnato
- d. Ikawai ma bunniman
- e. Ikawai uoman (Mark Rauzon)

Koota (it. 36)

- a. Ikawai iaoni ngaona ma bunnato
- b. Bunniman
- c. Ikawai
- d. Ataei

Eitei (it. 37)

- a. Bunniman ikawai riki
- b. Ikawai mwaane (Mark Rauzon)
- c. Bunniman ataei
- d. Ikawai aine

Eitei (it. 38)

- a. Ikawai mwaane ae e kiba (Kimball Garrett)
- b. Ikawai aine ae e kiba (Kimball Garrett)
- c. Bunniman
- d. Bunnato
- e. Nanai - kabwakabwaka

Karakara (it. 39)

- a. Ikawai ae kiba
- b. Bunnato ao bunniman (Michael Phillips)
- c. Bunnato (Michael Phillips)
- d. Ikawai n tabo ni kabwakabwaka

Tarangongo (it. 40)

- a. Ikawai ae e kiba (Kimball Garrett)
- b. Ikawai ma bunniman iaani baina (Mark Rauzon)
- c. Bunnato (Kimball Garrett)
- d. Bunniman (Mark Rauzon)

Keeu (it. 41)

- a. Ikawai ae e kiba
- b. Ataei ae e kiba
- c. Ikawai - kamwarakea bunniman (Mark Rauzon)
- d. Ikawai ma bunnato (Mark Rauzon)
- e. Ikawai

Io (it. 42)

- a. Bunnato
- b. Ataei
- c. Ikawai

Mangiri (it. 43)

- a. Bunniman
- b. Ikawai - kabwakabwaka ma bunnato
- c. Ataei

Raurau (it. 44)

- a. Bunnato
- b. Bunniman
- c. Ikawai (Mark Rauzon)

Matawa (it. 45)

- a. Bunnato
- b. Bunniman ni ngaona te Mangiri
- c. Ikawai ae e kiba
- d. Ikawai

Bokikokiko (it. 46)

- a. Ikawai - kamwarakeia bunniman (Robert Kennedy)
- b. Ikawai (Mark Rauzon)

Kun (it. 49, eta)

- a. Buraena ae e kinaaki iai (Kimball Garrett)

Kiriri (it. 49, nano)

- a. Buraena ae e kinaaki iai (Kimball Garrett)

Kewe (it. 50, eta)

- a. Ikawai (Mark Rauzon)

Kitibwa (it. 50, nano)

- a. Aekani buraena teuana (Kimball Garrett)

Cover:

White Terns (Mark Rauzon)

Title page:

Bokikokiko (Mark Rauzon)

Back Cover:

- a. Bird reserve sign (Mark Rauzon)
- b. Great Frigatebird (Mark Rauzon)

Phoenix Petrel (p. 28)

- a. Adult in flight
- b. Adult with egg
- c. Chick

Wedge-tailed Shearwater (p. 29)

- a. Chick (Michael Phillips)
- b. Adult in nest burrow
- c. Adult outside burrow

Christmas Shearwater (p. 30)

- a. Egg
- b. Chick
- c. Adult pair (Mark Rauzon)

Audubon's Shearwater (p. 31)

- a. Adult with egg
- b. Chick
- c. Adult with chick under its wing

Polynesian Storm-Petrel (p. 32)

- a. Adult with egg
- b. Chick (Michael Phillips)

Red-tailed Tropicbird (p. 33)

- a. Older chick
- b. Young chick
- c. Adult on nest

Masked Booby (p. 34)

- a. Adult pair
- b. Juvenile
- c. Adult with egg
- d. Chick

Brown Booby (p. 35)

- a. Adult in flight
- b. Adult on nest
- c. Egg
- d. Adult with chick
- e. Adult pair (Mark Rauzon)

Red-footed Booby (p. 36)

- a. Adult at nest with egg
- b. Chick
- c. Adult
- d. Juvenile

Great Frigatebird (p. 37)

- a. Older chick
- b. Adult male (Mark Rauzon)
- c. Young chick
- d. Adult female

Lesser Frigatebird (p. 38)

- a. Adult male in flight (Kimball Garrett)
- b. Adult female in flight (Kimball Garrett)
- c. Chick
- d. Egg
- e. Nesting colony

Great Crested Tern (p. 39)

- a. Adult in flight
- b. Egg and chicks (Michael Phillips)
- c. Egg (Michael Phillips)
- d. Adults in nesting colony

Gray-backed Tern (p. 40)

- a. Adult in flight (Kimball Garrett)
- b. Adult with chick under its wing (Mark Rauzon)
- c. Egg (Kimball Garrett)
- d. Chick (Mark Rauzon)

Sooty Tern (p. 41)

- a. Adult in flight
- b. Juvenile in flight
- c. Adult feeding chick (Mark Rauzon)
- d. Adult with egg (Mark Rauzon)
- e. Adult

Brown Noddy (p. 42)

- a. Egg
- b. Juvenile
- c. Adults

Black Noddy (p. 43)

- a. Chick
- b. Adult at nest with egg
- c. Juvenile

Blue-gray Noddy (p. 44)

- a. Egg
- b. Chick
- c. Adult (Mark Rauzon)

White Tern (p. 45)

- a. Egg
- b. Chick in old Black Noddy nest
- c. Adult in flight
- d. Adult

Bokikokiko (p. 46)

- a. Adult feeding nestlings (Robert Kennedy)
- b. Adult (Mark Rauzon)

Pacific Golden-Plover (p. 49, top)

Basic plumage (Kimball Garrett)

Wandering Tattler (p. 49, bottom)

Basic plumage (Kimball Garrett)

Bristle-thighed Curlew (p. 50, top)

Adult (Mark Rauzon)

Ruddy Turnstone (p. 50, bottom)

Alternate plumage (Kimball Garrett)

TAEKAN TE TIA KORORONGORONGO

E a tia Lee Jones n reirei aroia mannikiba ma ngke 8 ana ririki ni maiu.

E reke ana beeba ae te Bachelor of Science n taekaia maan man te North Carolina State University ao te Ph.D man UCLA ibukin ana kakaaei iaon taekaia mannikiba iaon taian abamwakoro. 21 te ririki n nako ao e a tia ni mwakuri bwa te kon-tiaretante ibukin te enwaeromenta ao te tia kakaae ibukini maiuia maan. E a tia naba ni ibuobuoki n aaba tabeua i Atia ao n te Betebeke ni katei ma ni waakini mwakuri ibukini kanakoroan ma tararu-aan te enwaeromenta. A mwaiti beeba n rabakau ma rongorongoia mannikiba ake a koreaki n taiani maekatin iroun Dr Jones ao ni bon taai aikai a tia naba ana boki aika *Birds of California's Channel Islands* ao *A Field Guide to the Birds of Belize*.



ABOUT THE AUTHOR

Lee Jones has been studying birds since he was 8 years old. He received a Bachelor of Science degree in zoology from North Carolina State University and a Ph.D. from UCLA for his biogeographical studies of birds on islands. For the past 21 years, he has been working as an environmental consultant and research biologist. He has assisted several developing countries in Asia and the Pacific in establishing and implementing environmental protection measures and procedures for conducting environmental impact assessments. Dr. Jones has written a number of scientific papers and magazine articles on birds, and recently completed two books: *Birds of California's Channel Islands* and *A Field Guide to the Birds of Belize*.

