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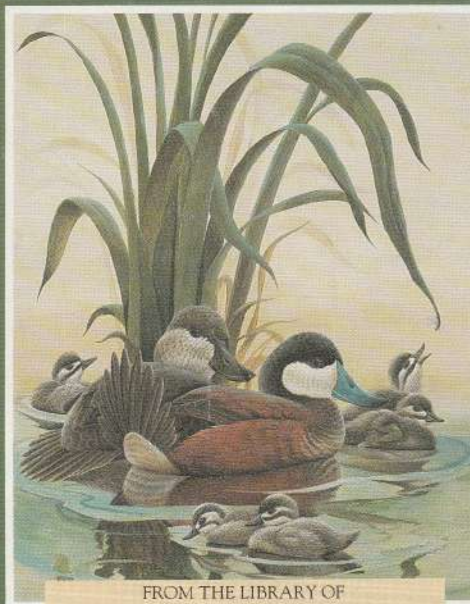

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Verlie Fowler

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Australia's arboreal ambassador is in trouble. The leveling of eucalyptus trees, koalas' prime habitat and food source, tops the listed threats to their numbers. Now Australians are rallying to the rescue.

KOALAS OUT ON A LIMB

By OLIVER PAYNE
NATIONAL GEOGRAPHIC SENIOR STAFF

Photographs by MIGUEL LUIS FAIRBANKS

THE ONE TIME I HELD A KOALA, snugging him close to my chest, I must admit that he had just the kind of effect on me I'd convinced myself I would resist. For a moment Dopey the tame koala became Julia my squeezable two-year-old. The association was visceral. Like her, he seemed soft and vulnerable, a coming together of circles, from ear and head to belly and behind.

Julia melted away when I looked into the koala's eyes, unresponsive amber beads with vertical slits for pupils. His nose, dramatically Roman, was satiny black, with splashes of pink skin beneath butterfly-wing-shaped nostrils. The mouth was a deep V, equipped with teeth that would give Dracula goose bumps. It curled down at the corners, making for a grouchy look, as if someone had just shaken him out of a deep sleep.

He smelled good, exuding the fragrance of eucalyptus, and looked dapper in a coat of luxuriant fur, white on the chest, light gray elsewhere. An orange-brown smudge on his chest marked secretions from his scent gland, a built-in dating kit. Male koalas rub their scent gland against trees to claim a patch; with guttural grunts that reverberate through the forest, they announce their presence.

Gingerly I took hold of a front paw and fingered the points on a set of gleaming black scimitars. No reaction. Dopey remained inert. Brief though it was, this Australian encounter satisfied me that the most

Driver's helper, two-year-old Pebbles rides home with foster parent Miriam Graham. Injured and orphaned when she and her mother were hit by a car, Pebbles' broken jaw prevents her from eating without help, and she is too young to be left unattended overnight at the koala

re

ala

hospital in Port Macquarie, New South Wales. "Pebbles will be a permanent resident of the hospital," says Graham, a volunteer with the local caregivers, one of a dozen or so groups in Australia that tend ailing koalas. "She'll never be able to fend for herself in this mad world."

endearing thing about a koala is its gentleness.

Wrong! Koalas are more like shrunken grizzlies than teddy bears. Just listen to Keith Hayes, a land surveyor in Queensland who gives them a wide berth. "They're grumpy little buggers," he chortled. "If you get a real old grumpy bugger, a big one on the ground, and you're in his way, he'll sort of make this horrible growling noise and show his claws.

"Oh yes, they'll rip you to pieces. You just hope they don't turn on you and come in scratching. You'd look as though you'd been dragged behind a car for a hundred yards."

Phascolarctos (pouched bear) *cinereus* (ash-colored): Australian tree-dwelling marsupial; national icon, international heartthrob; nocturnal, odorous, somnolent. Preferred diet: eucalyptus leaves. Range: mainly the coastal forests of Queensland, New South Wales, and Victoria.

EASTERN AUSTRALIA left me with the strong impression that koaladom is buckling under human success. Convinced too that of all the oddities this continent has brought forth, none is more peculiar or influential—or contradictory—than the pseudo bear. Koalas grown in the wild are sometimes feisty, but in zoos they are downright cute. Koalas are bearers of very little brain, yet they have been revered for their wisdom. And though they live to sleep, Velcroed to a branch most of the day, koalas galvanize people.

Take Australians. The contrary marsupial is a superstar that radiates in their collective imagination. "The koala," confides Ros Kelly, formerly the environment minister, "is essential to how we see ourselves."

Too right! Koalas have slept their way deep into the Australian psyche—and woken up in the guise of mischievous Blinky Bill and debonair Bunyip Bluegum, beloved heroes of children's fiction. They're an affair of the spirit, as Aussie as kookaburras and convict ancestors.

What, then, explains a letter like this? "Dear Sir, I have cancelled my trip to Australia. I will re-book *only* after koalas are well protected." Dated July 6, 1992, this was one of more than 12,000 similar messages sent to Australia's ambassador to the United States as part of a campaign by an international animal rights organization to ensure the survival of the koala.

Photographer MIGUEL LUIS FAIRBANKS was born in Guatemala and now lives in Santa Cruz, California. His byline appeared previously in the GEOGRAPHIC in "Maya Heartland Under Siege" (November 1992).

Between a grunt and a belch, a male koala's bellow can be heard a half mile away. Koalas reach maturity at two years, but males rarely mate successfully until they are three or four. About 35 days after conception in spring, a female gives birth to a single joey, nourishing it in her pouch for five months. SHIN YOSHINO, HIPS/UNIPHOTO PRESS INTERNATIONAL

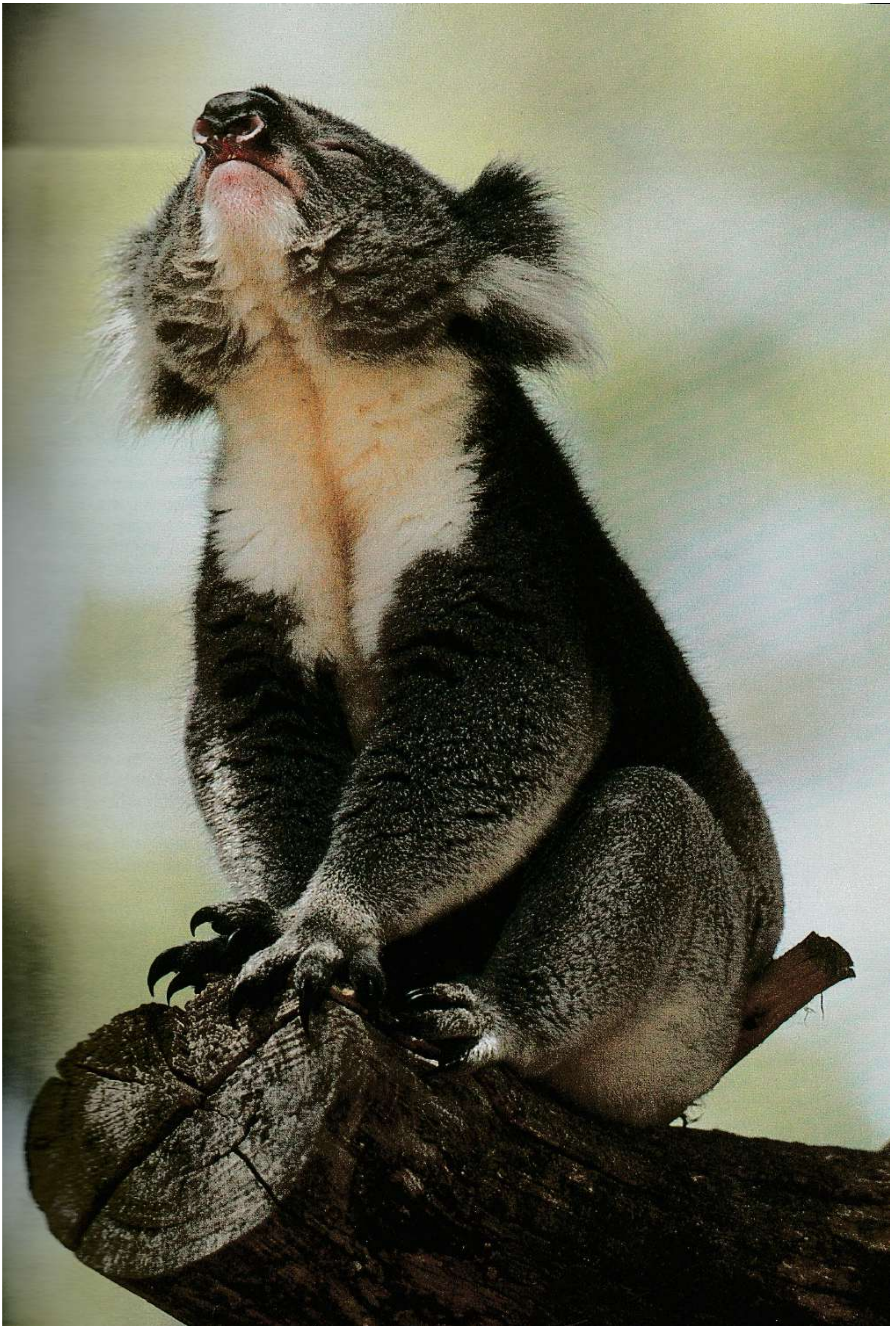
In 1992 the International Union for Conservation of Nature and Natural Resources listed 59 threatened Australian marsupials. Half came under the headings "endangered" and "vulnerable," and half, the koala among them, were judged "potentially vulnerable."

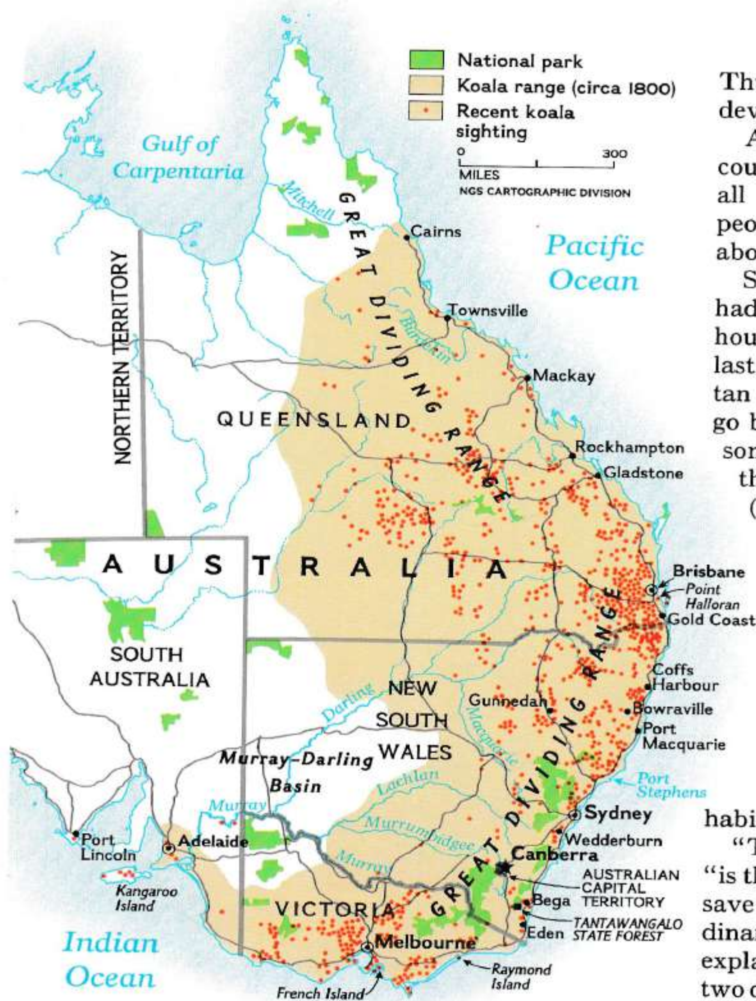
Recent research has added greatly to the store of knowledge about what koalas are like, but relatively little work has been done on the details of their habitat needs—how widely they range, for instance, and what particular eucalyptus trees they prefer. In the absence of irrefutable scientific evidence, debate about their status is emotionally charged. People readily invoke the term "koala politics" to explain often vituperative differences of opinion about how the animal is faring.

Many Australians I spoke with are in despair over what they regard as the unstoppable plundering of nature. (Indeed, opinion polls consistently rate the environment as one of the most compelling public concerns.) The intensity of their frustration owes much to the fact that in Australia nature has conjured so many forms of life, like the koala itself, that are wonderfully bizarre—and of course irreplaceable. It's a tragedy, these Australians say, that greed and institutional intransigence are squeezing the life out of their land.

I heard the message most forcefully from women. One embittered crusader went so far as to shrink the problem down to twin evils of her countrymen—chauvinism and alcohol consumption—uttering the words with a hopeless sigh.

Such assertions aside, there is no doubt that the clearing of forests has caused serious problems for koalas: They are dying out at alarming rates in places. As dwindling colonies become separated by houses, fields, golf courses, shopping centers, and the roads that serve them, inbreeding threatens to impoverish the genetic stock of the species.





KOALAS ON THE RUN

Kill a koala, make a million! Promises of wealth from koala fur spurred a slaughter last century that continued until 1927, when public outcry stopped it. The clearing of eucalyptus forests for farms, logging operations, and urban development has further devastated the marsupials by shrinking their range. Today koalas claim treetops in disconnected stands in four states. Concentrated along coastal plains, they compete with people for prime real estate, particularly in southeastern Queensland—the fastest growing region in the commonwealth. There they struggle to survive in the midst of city dwellers and the trouble they bring: traffic, dogs, and obstacles that block a koala's path to the next tree.

Thus weakened, koalas could be susceptible to devastation by disease.

Another koala defender ventured that she could foresee the entire east coast stripped of all the old, native eucalyptus trees. Most people, she said, just don't care or are in denial about how bad the situation is.

Sue Dobson cares. When I met her, Dobson had been campaigning for four years to stop 22 houses from going up on the doorstep of the last healthy colony of koalas near metropolitan Sydney. Where houses go, she reasons, so go big killers: cars, dogs, and carelessness—someone forgets to stub out a cigarette, and these 70 or so koalas die in the flames. (There is also the inexplicable threat of arson. Last September three youths set a fire that almost obliterated the colony.) There are insidious enemies too, such as weeds that choke native plants and polluted runoff that poisons trees.

The subdivision remains unbuilt, in part because Dobson persuaded local union workers to refuse to provide electric and telephone service—possibly the world's longest running "green ban" for habitat conservation.

"The important thing," Dobson told me, "is that we're just ordinary people fighting to save the koala." She struck me as an extraordinary blend of courage and fear, a quality she explained. One day someone threw acid on her two dogs, scarring them badly. Another time a homemade bomb was lobbed onto her porch, where it failed to explode. After telling this story, Dobson leaned toward me and said in a hushed voice, as if she almost believed the coming thought, "If I get it next time, you'll know why."

YOU HAVE TO WONDER: Why do the lives of some Australians coalesce so powerfully around the koala? I ask Ken Walker, whom I meet in drowsy Bowraville in New South Wales, for his perspective. This soft-spoken elder of the Gumbaynggir tribe is one of only a few men initiated into the Dreamtime of his people and thereby entrusted with passing down the sacred creation myths.

That Ken also has koala Dreamings to share makes him an Australian treasure. Images of koalas are curiously scarce in Aboriginal paintings and rock carvings. A partial explanation may be that some tribes thought of the koala as the supreme totemic symbol, the

wisest of all beings, and painting it was forbidden. In Gumbaynggir lore, Ken tells me, koalas are seen as mischievous children with magical powers.

"See, the bear has special significance," he begins. "Our people were walking, then these two women got stirred up about something or other, and they made the sea, and all our people were trapped on an island. They had two koalas with them, so they stripped their stomachs—you know, the gut—and that formed a bridge back to the mainland. On the entrails of koalas, when they're dried and held up to the sun, you'll see footprints."

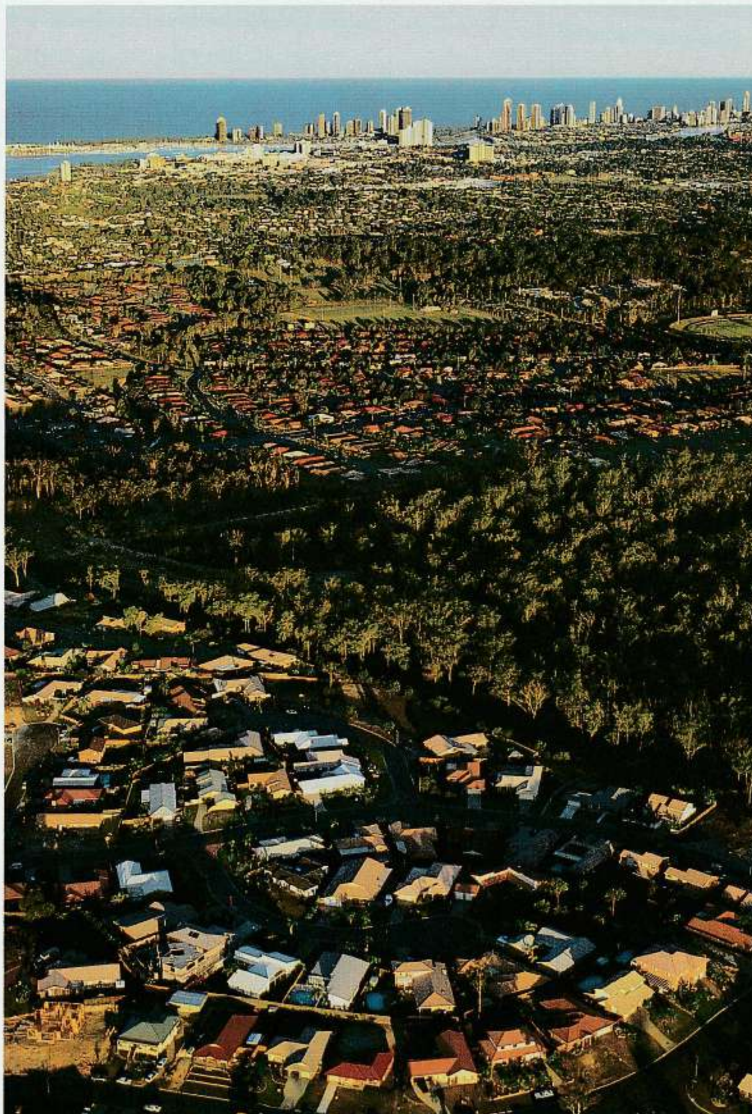
Ken Walker should know. When he was a boy, koala was on the menu, supplementing such staples as possum and pademelon (not a fruit but a small wallaby). What does koala taste like? Ken is dismissive. "The taste didn't come into it, as long as it filled the belly. I'd say a strong eucalypt taste."

I try to imagine eating a plate of barbecued cough drops. "See," he says, "eucalypt was a healing aid. When you ate koala—zoom, you healed the insides."

Ken tells how at the agile age of six he began hunting koalas. "We just climbed the tree and knocked him down." One day he heard a haunting cry, the lament of a mother koala circling a tree from which her joey had been taken. In an instant Ken understood why some Aborigines believe koalas are the souls of dead children.

"When they started crying," Ken Walker says quietly, "I gave up hunting."

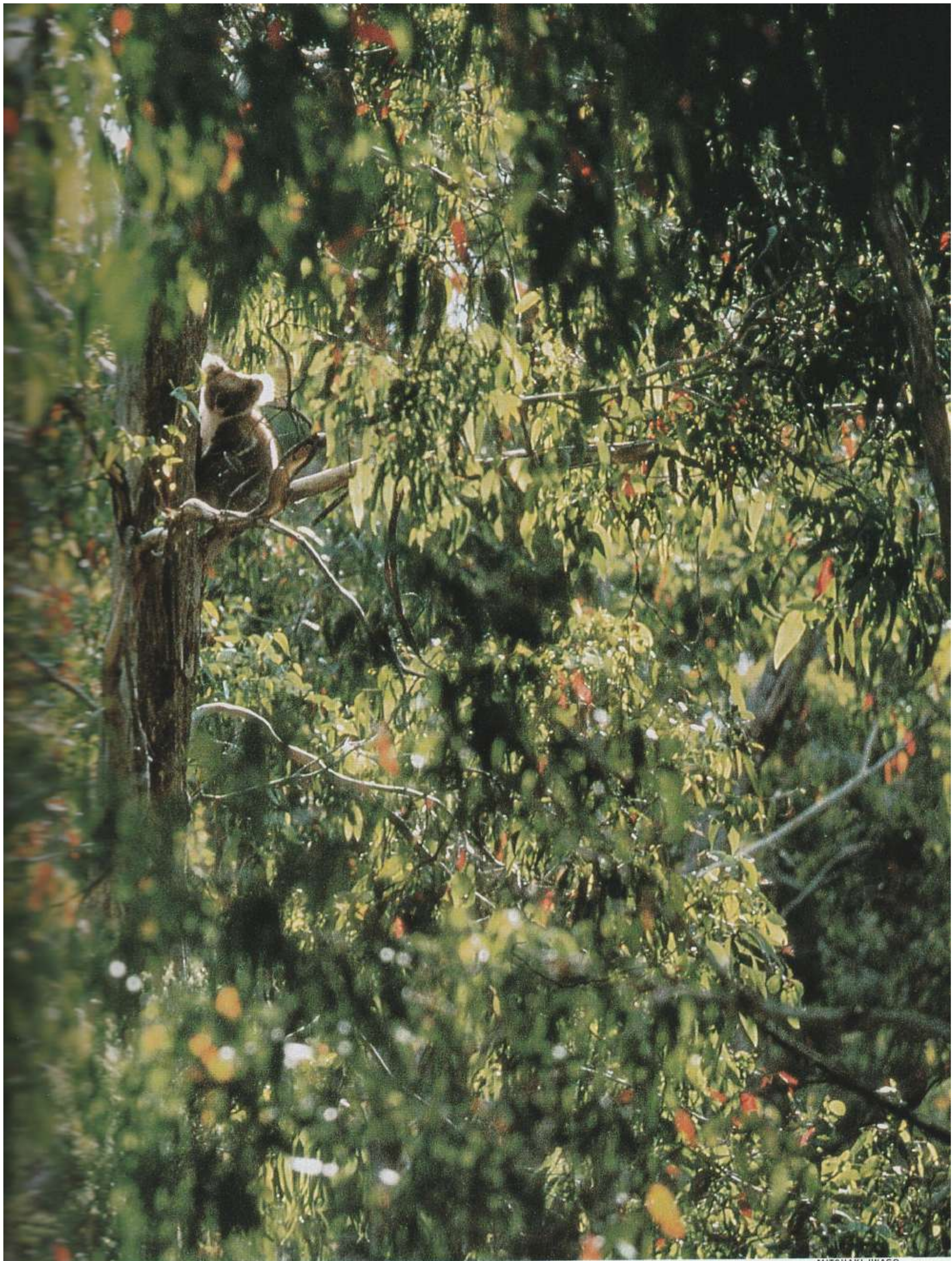
Closing in on all sides, houses in Queensland's Gold Coast usurp koala habitat, leaving the animals a mere 80-acre enclave. Though some urban developers now connect green tracts with tree corridors to provide passage between them, conservationists doubt that koalas will use the pathways.



Aborigines thinned koala populations in the eastern forests, but the cries grew louder last century as European settlers discovered koala fur. Snaring and cyanide poisoning, unlike shooting, left pelts unmarred. In the late 1800s colonies in Victoria suffered huge losses, compounded by disease and bushfires. In Queensland the government periodically declared open season. The last one, in August 1927, yielded almost 600,000 skins, many of which were shipped to St. Louis, Missouri, a hub of the fur trade. This slaughter caused such outrage that within months the Australian government banned the export of koala pelts. By then in the state of South Australia there were no more cries to be heard.

HUNTING FOR A KOALA in New South Wales these days can be tantalizing, especially when your radio receiver is beeping loud enough to shame a kookaburra. "I'm pretty sure we're right under her,"

Solitary tree dwellers, koalas rest as many as 20 hours a day. At night they rouse themselves to forage for eucalyptus leaves in their home ranges, which can vary from seven to 70 acres, depending on habitat quality. The total koala population is unknown. One guess puts their



MITSUAKI IWAGO

numbers as high as 400,000; another, in 1993, as low as 40,000. "Our '93 figure sent out shock waves," says Steve Phillips of the Australian Koala Foundation. "We're talking about animals in a chronic state of decline."

said Rob Close, twisting the parallel prongs of his antenna as if hoping to snag the animal.

For several months Close, a senior lecturer in biology at the University of Western Sydney, had been radiotracking two koalas through O'Hare's Gorge, a primeval forested gash near the town of Wedderburn. "I realized that land-use decisions were being made without any knowledge," said Close, his voice barely audible above the chirping of the receiver and the snapping of twigs underfoot. Close was referring to the subdivision whose prevention is Sue Dobson's cause célèbre. Recording the habits of these koalas, he said, will help establish the range patterns and food preferences of the colony as a whole.

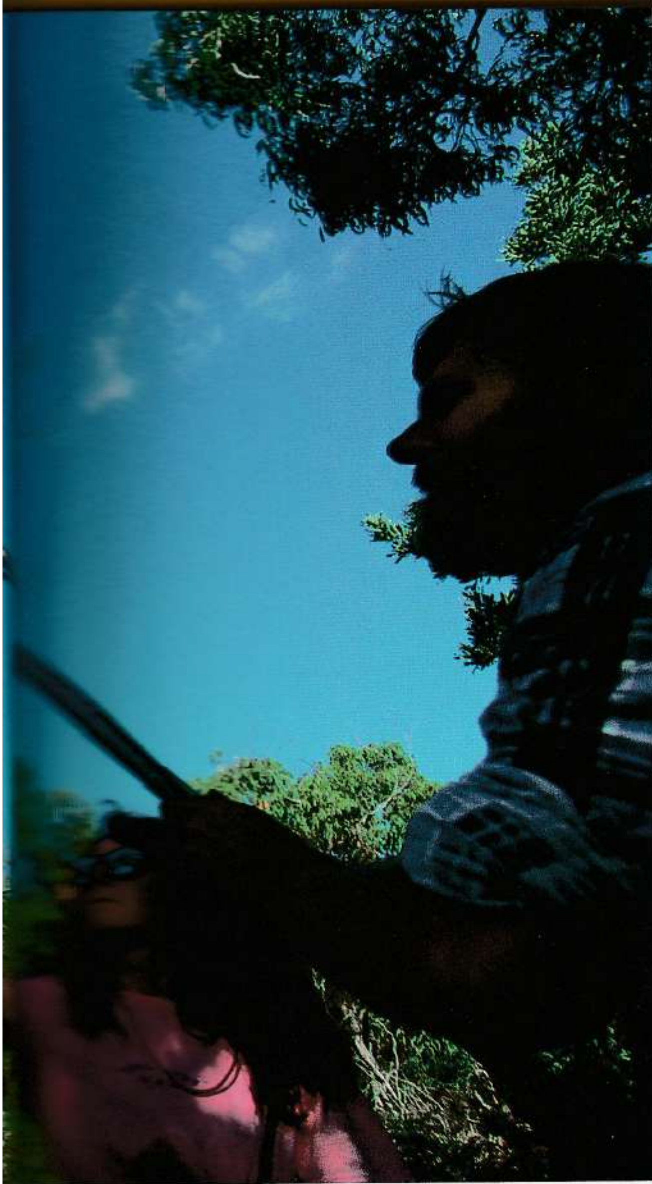
Also with us in the gorge, eyes up, neck crooked, squinting to resolve a fur ball out of the tangle of leaves and branches, was Keith Longhurst, retired truck driver and amateur naturalist. Keith knows his koalas and often speaks about them at service club functions. He was not surprised that on this sunny afternoon the receiver directed us to the shady side of the gorge.

"This is how they operate," he said. "They find a great big tree and sit with the bole between them and the sun, bums to the breeze, fast asleep."

If you're going to find a koala, Keith advised, "you've got to think like a koala."

That shouldn't be too challenging. If the shriveled brain were not well cushioned by membranous tissue, it would rattle around like the seed in a boab pod. "There's no other creature on earth with a brain so aberrant,"

National Geographic, April 1995



Shooed down by a waving flag, a koala on Victoria's Raymond Island submits to a research roundup (left). Once bagged (below), it is fitted with a radio collar and checked for chlamydia, a bacterium that plagues koalas across Australia. Aggravated by stress, infection can cause conjunctivitis, urinary-tract disorders, sterility, and even death. "We don't see the outward signs of chlamydia on the island, but reproduction is very low," says veterinary pathologist Peter Mitchell. New addition to the colony, a pouch young is measured to determine its age (above).

A little pain is the price of research for a ward of Lone Pine Koala Sanctuary near Brisbane. Veterinarian Wendy Blanshard draws blood to test the koala's response to a vaccine for a respiratory disease. Such ailments are not usually fatal in captive koalas, which succumb most often to old age.

Jack Pettigrew of the University of Queensland had told me.

Pettigrew reckons the koalas have eaten themselves silly on eucalyptus leaves. "All their tissues reek of eucalyptus oil," he said disparagingly. "If you dissect one, its whole system is perfused with cineole." Cineole, an oily compound that gives eucalyptus its distinctive smell, is one of several toxics in the leaves koalas love. "They really are an intoxicated animal with an atrophied brain."

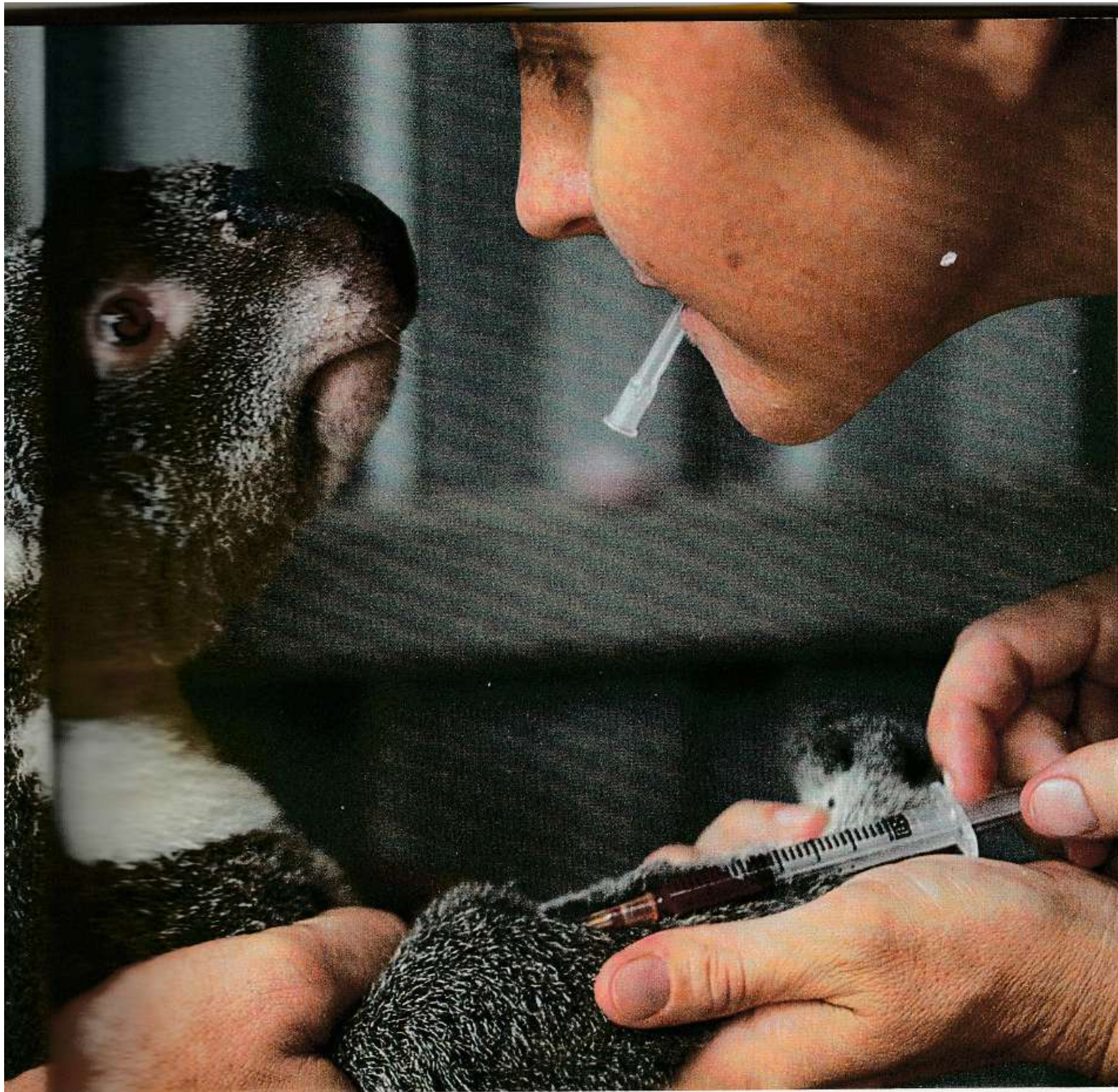
Arguably, the smartest thing about a koala is its gut, able to make something useful out of some of nature's most offensive greens. I discovered this from Steven Cork of the Commonwealth Scientific and Industrial Research Organization in Canberra. "Most people find eating muesli pretty hard work," Cork said. "Well, if you threw the muesli away and ate the cardboard box, that would be more like eating eucalyptus leaves."

To extract enough energy from this low-protein diet, koalas grind through one to three pounds of food a day, sniff-testing each leaf for suitability. Heavy artillery in the digestive arsenal is the cecum, an appendix as much as eight feet long. Here the tiniest leaf particles—material highest in protein, sugars, and fats—are trapped for up to eight days so every last bit of goodness can be exploited. Microorganisms in the cecum help break down the potentially fatal phenols. (On a diet of eucalyptus leaves you and I would quickly die from liver failure.)

And so for the better part of an afternoon Keith Longhurst did his best to think like a koala, while Rob Close moved from tree to tree, brandishing his radio antenna. Outwitted, we at last clambered back to the top of the gorge, and Keith filled me in on koala mothering.

Babies are born after a gestation of about 35 days. For the next five months they hunker down in the pouch, attached to a nipple. "Then, all of a sudden," he said, "when the mother reckons it's time for Herbie to come out, instead of defecating pellets, she starts excreting this pap. It's a real slimy green pap, and the baby licks it up hungrily for about a fortnight." At this Keith's voice rose to a falsetto: "You should see the bloody Rotary people when I tell 'em that; they just about throw up in their plates!" Keith rolled on. "The excreta gets into his gut—you know, he's got about 20 foot of gut in there, it's all over the place—and starts his stomach working so he can break down the stuff that's poisonous. Then the pap turns back to pills, and he's out, mate, and he's eating gum leaves."

"MAGIC, KOALAS, AREN'T THEY?" On another sun-washed spring afternoon I visited Summer Hill Primary School in Sydney to hear Dan Lunney address the students. Lunney, head of survey and research at the New South Wales National Parks and Wildlife Service, is an authority on



koalas in the wild. He presented his evidence with the flair of a courtroom lawyer.

"That's what the Bega Valley would have looked like in 1830," he said, showing a slide of eucalyptus forest in the southeastern part of the state. He clicked to a slide of rich pastureland. "That's what it looks like today. What a spot! Green. Lush. But it's been stripped. It's dairy country now, and everyone eats Bega cheese. Well, the price of a cheese is a koala."

In 1986, as part of the National Koala Survey, Lunney's group sent questionnaires to households throughout New South Wales. When they combined the results with his historical research, the conclusion was clear: Loss of habitat is *the* big problem for koalas.

There are more than 600 species of eucalyptus trees in Australia. The koalas thrive in 10 to 15 of them, trees that reach at least 30 feet and have a fairly thick canopy. These do best in low, flat areas with the richest soil—the very places where farmers and graziers cleared holdings and pioneer towns sprang up to supply them. Well over two-thirds of the kinds of forests Ken Walker hunted koalas in have already been destroyed.

Australia is a land so rich in plants and animals that it is recognized as one of 12 "megadiversity" nations. It is the only one of those 12 wealthy enough to belong in the First World. Yet habitat degradation has led 20 Australian mammal species—10 of them marsupials—to extinction in modern times. That's about half the modern world total for mammal extinctions, a record no other country can match.

If I awoke tomorrow as a marsupial, I'd

rather be a koala than a burrowing bettong or a northern hairy-nosed wombat, both a whisker away from extinction. (There is no tomorrow for such pouched eccentricities as the crescent nailtail wallaby, Tasmanian tiger, or pig-footed bandicoot.)

But even as a koala, I'd be very anxious. *Phascolarctos cinereus* slipped through the net of the federal Endangered Species Protection Act of 1992, because it is not yet listed as endangered throughout its range. Widespread local extinctions—as in New South Wales, where the koala was put on the endangered list three years ago—are warnings for the species as a whole.

No one knows how many koalas remain; as I learned, they can be extraordinarily cryptic. South Australia contains a few hundred descendants of reintroduced animals. Victoria? Who can say? Perhaps 10,000—or add another zero if you like. Estimates for New South Wales run as low as a few thousand. In Queensland the numbers are even fuzzier.

"There could be anywhere from a hundred thousand to half a million koalas," Greg Gordon of the Queensland National Parks and Wildlife Service disclosed uncomfortably. "I don't doubt that they have conservation problems, but we have trouble finding funds for the most endangered animals, let alone the koala. It has relatively good status."

Not so, parried his colleague Steve Phillips, a zoologist who has quit the park service to work for the Australian Koala Foundation. His best guess: 25,000 to 50,000. Phillips argues that Queensland should put the koala on the endangered list immediately, in hope of preventing the kind of population slide that has already occurred in New South Wales.

Gloomy experts claim a nationwide population as low as 40,000. This does not imply that koalas are in imminent danger of extinction (Australians would *never* let that happen, I hear again and again), but Dan Lunney, like Steve Phillips, is worried by their rapid decline in many areas.

"If they did become extinct, would it affect other animals?" It was question time at Summer Hill School, and Lunney paused to frame an answer for 11-year-old Kingston Soo.

"Take the koalas away, and nobody wants to sing about saving insects. So a whole raft of animals depend upon the koala as a flagship species, as an umbrella species, as a symbol of the bush. And symbolism is extremely important when you're trying to save something."

A forbidden pat on a koala's head will draw a mild reprimand from employees of the Australian Wildlife Park in Sydney. New South Wales has specific laws limiting the handling of koalas, which, some experts say, become stressed from being held. Adding just the right touch, Japanese tourists plant saplings in the park (right) on the first Save the Koala tour. Leafy branches will be harvested as food for the colony of more than 60 koalas.

Call it koala power—the mysterious force that possesses Australians and sends them headstrong into battle. Sue Dobson has succumbed to it. So have Chris Allen and Tony Norton.

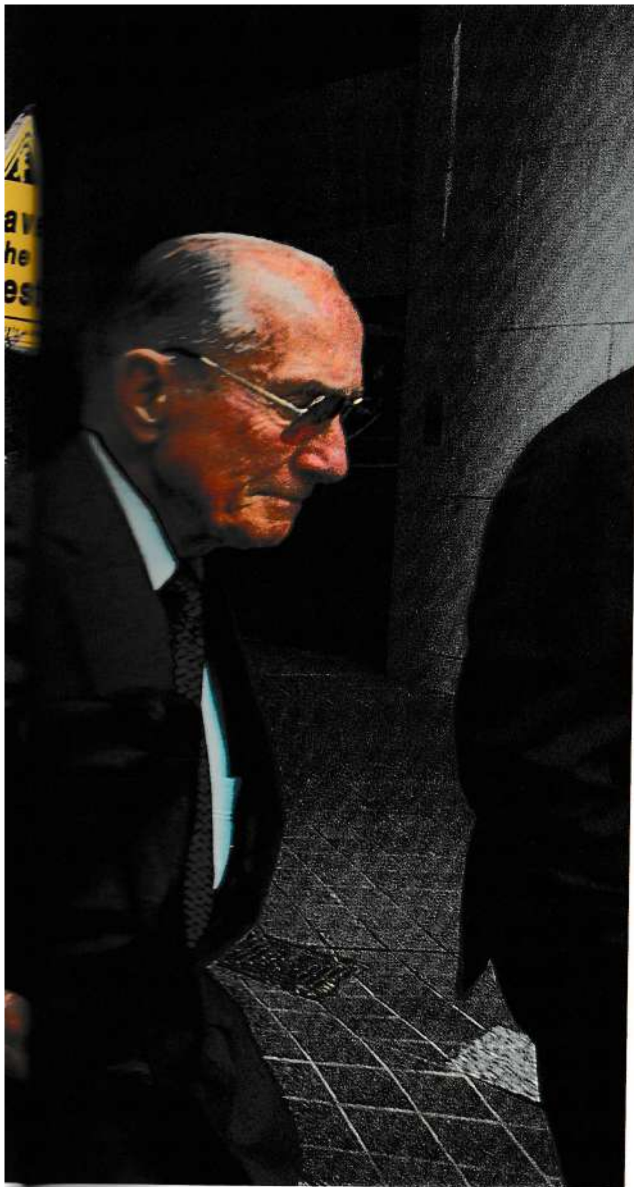
It was 9:30 p.m., breakfast time for koalas, when Chris, Tony, and I began laboring up a diabolical 2,000-foot escarpment in the southeastern corner of New South Wales. Not far below, Devils Creek tumbled by. This part of Tantawangalo State Forest is hot property: The venerable eucalyptus trees are irresistible to loggers, but koalas sleep in them.

Chris, an angular, companionable fellow who lives nearby on a small cooperative farm, carried his spotlight for the Tantawangalo Catchment Protection Association (TCPA)—local citizens who banded together a decade ago to keep area rivers clean and now double as a police squad for koalas. In his olive-green inverted flowerpot rain hat and Driza-Bone coat, he melted into the forest.

"The first koala we saw, most of us were just crying," Chris said. That koala, a mother found with her joey in November 1990, marked a turning point in what had become an ugly dispute between forest defenders and logging interests. Until then State Forests of New South Wales, the agency in charge of public forests, had flatly denied that koalas existed here. The agency had quotas to fill (paramount was supplying the Japanese-owned woodchip mill near Eden), and the presence of this threatened species could disrupt operations.

As we climbed, I saw a reassuring beam from one of two other TCPA survey teams. Each was doing two 500-yard transects; any evidence of koalas or other rare wildlife was to be noted. Every 30 yards we stopped, and it was lights out for five minutes.

"That way you get a better feel for the



Suiting up on behalf of koalas, protesters hit Sydney's streets. Last year conservationists won a three-year moratorium against logging in some state forests of New South Wales. The reprieve will give researchers time to study koala populations there.

forest," said Tony, a forest ecologist and marsupial expert from Australian National University in Canberra. Pivoting slowly, he shone his spotlight on every tree, from the ground up, in a circle of about 50 yards radius. Chris and I stood behind, straining to identify a koala. The three of us also combed the ground for droppings, next best thing to finding the animal itself. (Rumor has it that the little green pellets are good for your health: Drop some in water and breathe in the eucalyptus vapors to clear your sinuses. Let me know if it works.)

"Wombat!" Tony sang out. I glimpsed a beer barrel wrapped in a doormat hurrying off into the darkness. No koalas that night, but at least I could notch up their ground-hugging closest relative. The oldest fossils of primitive koalas date back more than 20 million years, but no one knows when or why the wombat-like forebears moved into the trees. Koalas and wombats share more than the lack of a tail. The texture of their footpads is alike, as is the shape of their toes, and they both have a single pair of teats in the pouch.

IT WAS NEARLY MIDNIGHT when we got back to the TCPA campsite. Tea appeared from a billycan as deep as a magician's hat, and I lingered by the fire, pondering the Fundamental Law of Tantawangalo Koalas: Every timber industry claim (C) has its counterclaim (CC).

C: Koalas have been sighted throughout the region; controlled logging poses no threat. CC: The estimated few hundred koalas in the southeastern forests may be a genetically distinct population and therefore crucial to the survival of the species. The accidental loss of a single animal is unacceptable.

C: Setting forest aside for koalas puts loggers out of work. CC: Overcutting, mechanization, and weak markets do that. Ecotourism creates jobs.

C: Koalas prefer logged areas, because leaves in young "regeneration" forests are more tender. CC: Unsupportable. Large, old trees are food staples that give more shade and are more likely to survive fires and droughts.

C: Logging is now prohibited in half the region's million acres of state forests, parks, and reserves. CC: Most of the parks and reserves do not embrace the areas of greatest biological diversity and are unsuitable for koalas.

Sunup, and the eucalyptus forest revealed itself. Isobel Crawford, a botanist from Canberra, pointed out a smooth-bark tree whose delicate leaves, red-tipped with spring growth, contrasted with the gray edifice of its trunk. "Monkey gum," she said. Early settlers called koalas monkeys, and the name given to a favorite food tree stuck.

"One of the most striking things about old-growth forests," Isobel said, "is the diversity of structure and ages." The half dozen or so eucalyptus species around our camp varied

from saplings to monarchs over a hundred feet tall. If old trees go, Isobel said, they'll take with them not only koalas but also birds, fungi, and who knows how many insects.

Chris Allen agreed. "There's much more than koalas at stake, but they are a prime indicator of the biodiversity of our forests."

That biodiversity now has a reprieve. In mid-1994 State Forests accepted a three-year moratorium on logging in and around Tantawangalo, allowing further research on the habitat needs of the elusive koalas of southeastern New South Wales.

IF ONE RODEO RIDER takes ten seconds to rope a 300-pound steer, what does it take for two koala cowboys to rope a 30-pound pseudo bear? No less dexterity than you need to thread a needle with a frayed piece of cotton—and it's just as exasperating.

I've come to French Island off the coast of Victoria. Our posse is led by Mick Douglas, a seasoned koala roper, and four other professionals from Victoria's Department of Conservation and Natural Resources. Wearing overalls and leather gloves, they want no flesh exposed. Their goal: to catch and tag 30 koalas, which will be released on the mainland.

Out on this windy speck it's impossible *not* to find koalas. With some 2,000 animals, French Island is Koala City, Australia. All are descended from a small group, possibly only two, introduced in the late 1800s. A few human families also make their home here, raising cattle and sheep—and contemplating the population explosion.

"They're bloody sexy," a state government biologist had told me. Actually, the island's koalas could double in number every three years, largely because of the absence of predators and disease. Most years nearly all females give birth, which is why rangers remove surplus animals. Otherwise, the koalas would strip the trees and starve.

Translocating koalas does raise questions. When you randomly pluck an individual—say a dominant male—from its group, what effect does the loss have on the remaining koalas? And what happens when that individual is plunked down in an unfamiliar forest, especially if that forest is already home to koalas?

More than 5,000 koalas have been moved off French Island since the 1920s, replenishing mainland colonies devastated by hunting. On the family tree of Victoria's koalas, which can be twice the size of their cousins in Queensland, nearly all animals trace back to the original French Islanders. This sameness, scientists insist, reinforces the need to preserve the genetic stock of every colony—however small—in the other states.

Lassoing a koala, Mick Douglas demonstrates, requires a noosed rope on a long pole to coax the animal down. You maneuver the noose over twitching ears and call in the flag waver. A red flag means one thing to a bull, quite another to a koala. Flap it, and a terrible squawk-screech ensues. Waaa-oww! WAA-OW! How DARE you wake me up! The indignant koala backs straight down the tree. You hope. More likely it comes to a fork and tries to shinny up the other branch. Often it loses its grip and drops out of the tree.

"Don't worry," says John Emmins reassuringly, "they bounce pretty well." A ranger then holds down the koala, and Emmins, an immunologist at Monash University in Melbourne, takes a blood sample. Emmins is here to test two beliefs: That these isolated koalas are free from chlamydia, a bacterium that causes conjunctivitis and urogenital tract infections, and that they are severely inbred. His findings: Antibodies to chlamydia were present in some animals, and "the French Island koalas are about as inbred as the folks in the movie *Deliverance*. Even so," Emmins says, "they are the largest, strongest koalas I have come across."

By noon our koalas are in full bounce, and the blood is coming nicely. Hard work, is it? "Ah yes," John replies. "Gets the adrenaline flowing, just trying to keep your fingers out of the way of all the pointy bits." When it comes time to board the ferry for the mainland, Mick Douglas has crateloads full of grumpiness, and I have an understanding of what it takes to keep up with the world's sexiest koalas.

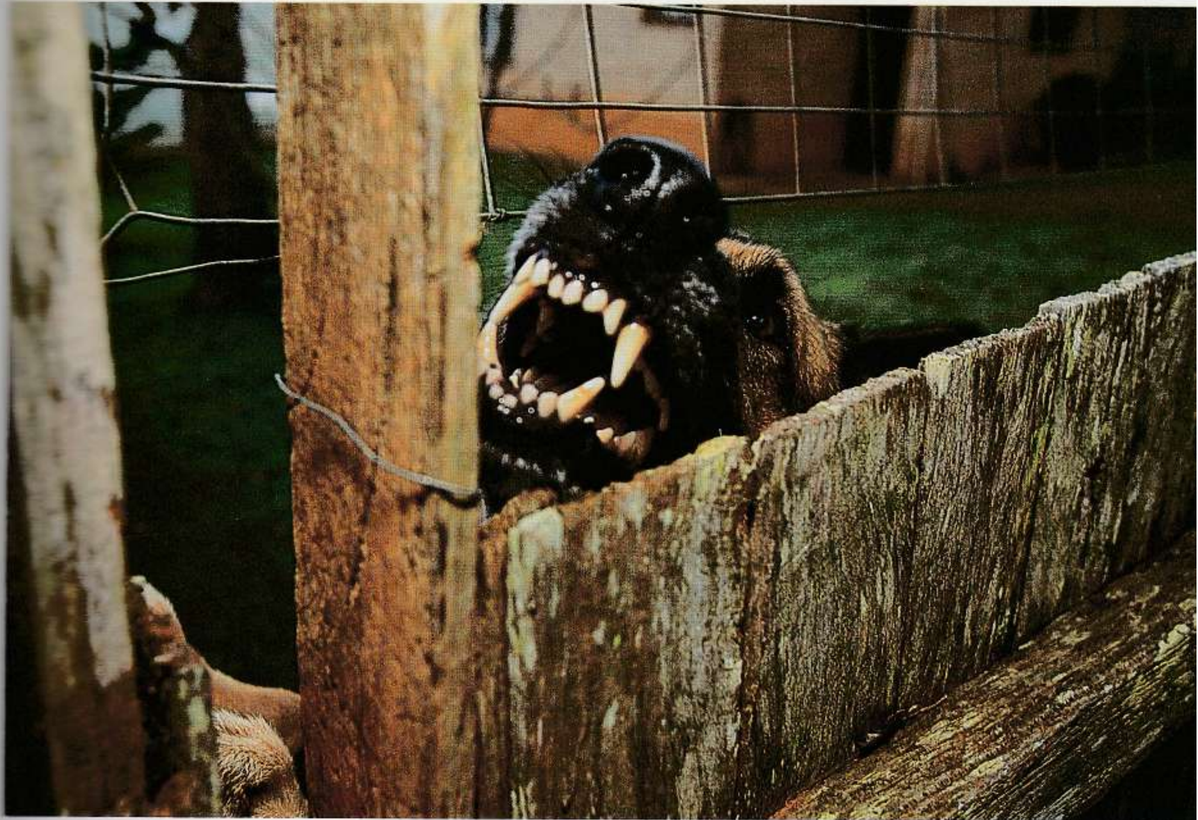
I discussed the problem with Roger Martin, a biologist at Monash. In 1989 Martin drafted Victoria's koala-management plan. "We have too many," he said bluntly. "I don't think we can continue to translocate them."

What to do?

"You have to adopt fairly severe management regimes. Just as some places in America are culling their deer populations, we. . . ."

Cull koalas, eh?

"That's ridiculous!" Such eruptions of opinion are in character for Debbie Tabart, once described by admirers as "a lava flow



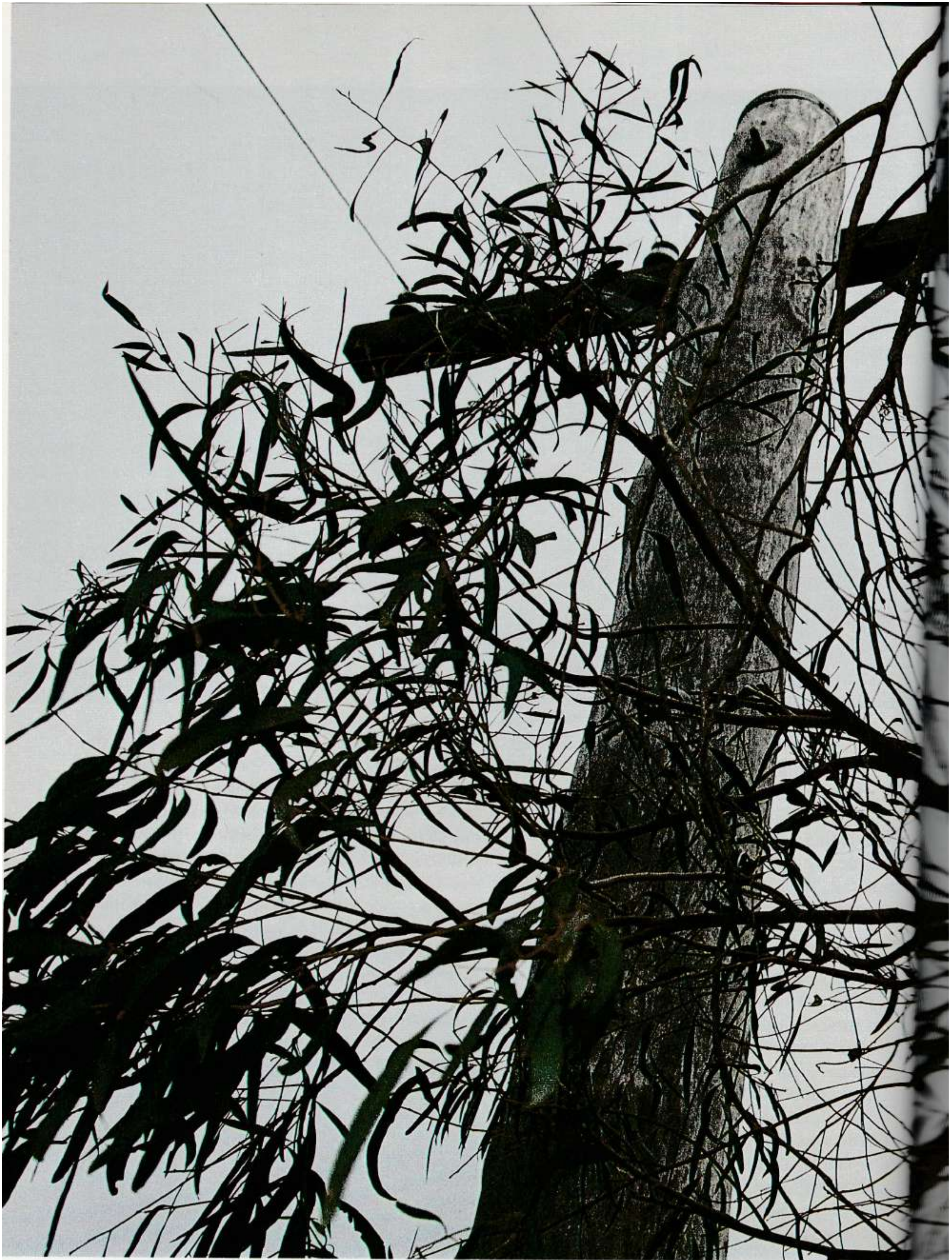
—red-hot and relentless." Tabart, who has a purple roof on her house and a pet donkey called Winston, leads the charge at the Australian Koala Foundation (AKF) in downtown Brisbane. "The problem," she insisted, "isn't too many koalas; it's not enough habitat."

WITH KOALAS, it seems, the talk always comes back to trees. The subject also profoundly disturbs Tricia Caswell, head of the Melbourne-based Australian Conservation Foundation. She cited a 1992 government report, which estimates that every year 200,000 acres of trees are cleared on private lands in this country that's as big as the contiguous U. S. but with one-fourteenth the people. As Caswell put it, "There's a terrible lack of will and lack of understanding about ecosystems. Australia's still a frontier. We're not even holding the line."

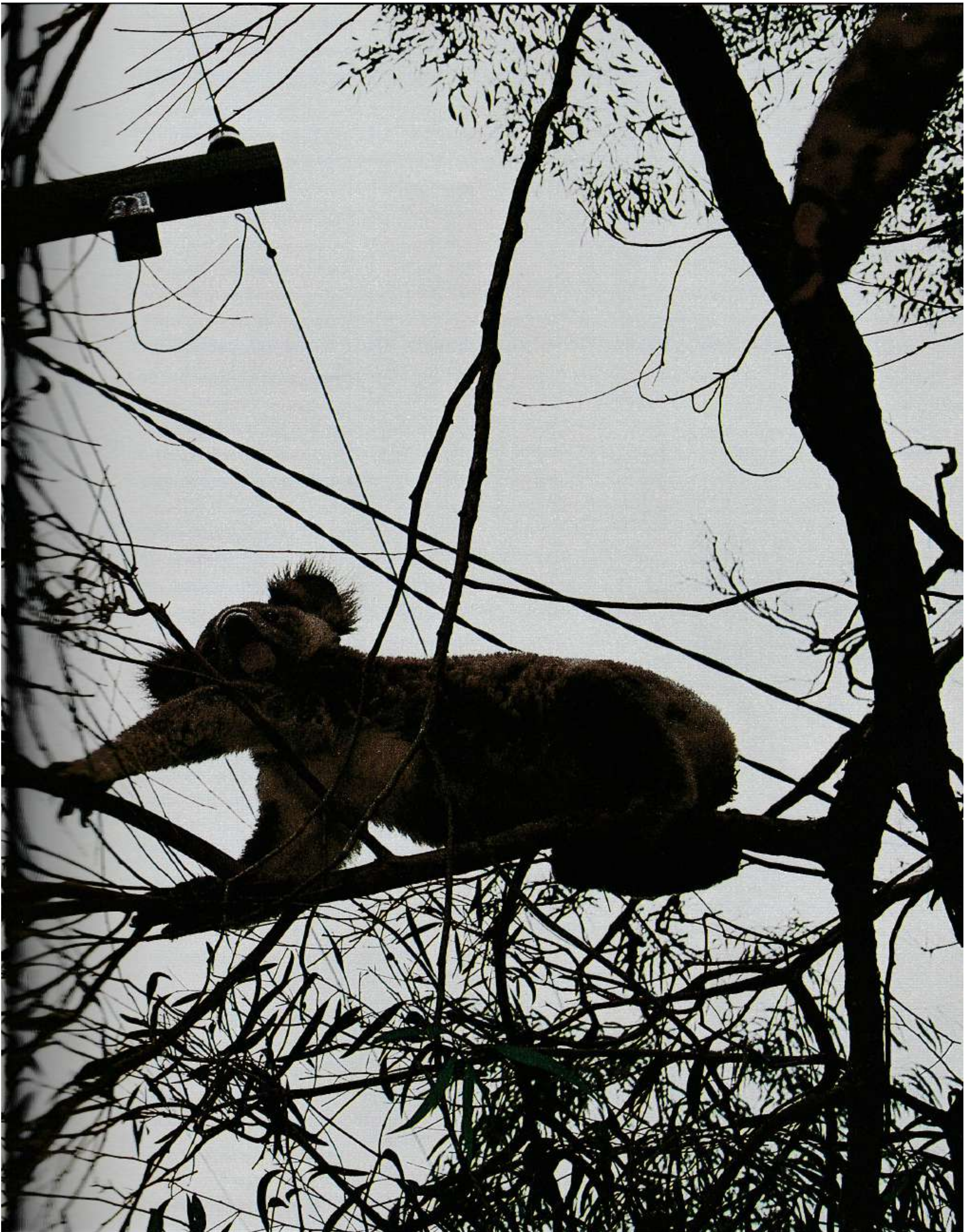
Shrinkage of forest continues apace on farms, as financially strapped graziers open up more land for pasture and more trees succumb to dieback. An Australia-wide catastrophe, dieback results from poor land management,

All fangs and no bite, a dog is stopped by a fence outside a koala hospital. While dogs, dingoes, foxes, and raptors cause some koala deaths, automobiles are the most lethal predators. Of some 4,000 koalas reported killed yearly, 2,500 are destroyed by cars in urban areas. To curb deaths, citizens groups are working to stop plans for a new highway linking Brisbane to Gold Coast.

Swimming pools can be deadly traps for koalas, which deviate little from a straight-line trek to the next food tree. To aid escape, many pool owners insert backspliced ropes that are easy to grasp.



A treetop roadway carries Amy the koala on her regular passage through a Port Macquarie neighborhood. An estimated 80 percent of koala habitat is on privately owned land, much of it in urban areas. The residents who named Amy continue to watch out for her safety.



"My family is privileged to share an environment with these animals," says neighbor Kay Garven. "We plant trees in our garden just for Amy." Many communities in eastern Australia are following the same plan, replacing trees lost to indiscriminate cutting.

which exacerbates the effects of natural stresses such as fire and drought, causing water tables to rise and salt to invade the topsoil.

Clearing for residential development has slowed in economically sluggish Victoria but not along the stunning coastline from Port Stephens to Brisbane and beyond. Here billboards shout LAND FOR SALE! Pockets of rich coastal forest hold the largest surviving koala colonies in Australia, yet the trees are falling fast. One Saturday afternoon in Coffs Harbour I watched bulldozers tearing up a strip of eucalyptus trees that happened to be the last link for koalas moving between two fragments of prime forest habitat.

At first, most money raised by the nonprofit AKF went to biological research, but Tabart has broadened the focus. The foundation has embarked on a computer-derived atlas of koala habitat. "It's fundamental," she said. "It puts the horse in front of the cart."

What she meant was that protecting koalas requires first establishing—tree by tree—the precise limits of their core areas and interconnecting eucalyptus corridors. Governments need this information if they are to create enlightened master plans for towns and regions.

Tabart hopes the maps will help change the way land is used. "It's political will," she said, "that's all that's missing."

NOT ENTIRELY. Sue Dobson reports that the government of New South Wales, spurred by information from Rob Close's radiotracking program, has acquired the disputed housing site near Wedderburn. Also, following a devastating bushfire last year, the state's park service worked with the coastal shire of Port Stephens to frame a community-based management program for the surviving koalas. It could serve as a model for a statewide plan. And in southeastern Queensland—a last stronghold of koalas in the wild—Redland Shire recently set a new direction by acquiring part of Point Halloran peninsula to safeguard a koala colony. The shire, like the neighboring city of Brisbane, imposes an annual environmental levy on its 94,000 residents; it is using the fund to buy other critical habitat in its 212-square-mile jurisdiction.

Meanwhile green has colored the thinking of some land developers—Allan Hutchison in suburban Brisbane, for one. Hutchison never tires of pushing the message that his way of designing communities saves money as well as nature: Let terrain and watercourses dictate the plan, preserve vegetation corridors, keep roads to a minimum. "If little Willy can get to school without crossing a road," he said, "it's going to be safe for the koalas."

Straddling a branch of eucalyptus, a koala naps in the safety of a zoo. Much remains to be learned about the animals and what they need to thrive again in the wild, but Australians seem determined to do just that. Says folksinger John Williamson: "If we lost the koala, it would be a shameful thing."

Last year the Queensland government trumpeted its adoption of the Koala Coast Protection Plan, with the goal of preserving some 7,500 acres of prime habitat by the end of the century. (Strangely, this same government also seems to favor cutting a multilane highway right through the proposed sanctuary.) To many wildlife experts, piecemeal protection of individual species is conservation quackery. Some argue that the commonwealth, not the states, should designate and administer national parks and that the nation's parks should be redefined and expanded to conserve areas truly representative of the fullness of Australia.

Whether or not that ever happens, there remains the problem of depleted farmland. One federally funded program aims to plant a billion trees nationwide in this decade. (Tricia Caswell reckons it would take 15 billion trees to restore just the Murray-Darling Basin.)

Taking their cue from state conservation agencies, farmers around Gunnedah in New South Wales have begun a "bear care" program. They are planting native eucalyptus trees, which consume 60 or more gallons of water a day, to lower the water table, thereby returning salt-encrusted pasture to fertility. Dan Lunney of the New South Wales park service applauds this idea. "Save the soil, save the farmers, and save the koalas," he said. "A magic combination."

Clearly magic will not guarantee the survival of the koala and the multitude that shelters under its symbolic umbrella. Ken Walker, the Aborigine elder who responded to the cry of a koala, wants to believe that a real commitment to end the destructive imbalance between people and nature is at hand.

"The people of the earth," he said, "are starting to wake up. They've taken enough away." □