Last Chance to See Study Guide

Last Chance to See by Douglas Adams

BOOKRAGS

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Plot Summary

Last Chance to See tells of humorist Douglas Adams and zoologist Mark Carwardine's travels in search of endangered species and examines the chances for these animals' and plants' survival.

Last Chance to See opens with humorist Douglas Adams on Madagascar, teamed with zoologist Mark Carwardine, looking for the nearly extinct aye-aye lemur on a government preserve. Adams and Carwardine decide to team up on a wider journey. They next meet to find the Komodo dragon, also on a government preserve. The only intrepid part of their adventure is enduring Indonesian bureaucracy and tourists. They fly next to Zaïre, endure missionaries and more bureaucracy, and enjoy a visit to the mountain gorillas at the Virunga volcanoes before finding in Garamba National Park some of the surviving northern white rhinoceroses. They hope next to see a flightless parrot, the kakapo, in Fiordland on South Island, New Zealand, but succeed in that mission on a preserve on Codfish Island.

The next step is China, where some 200 baiji dolphins are enduring sensory hell in the Yangtze River. A Conservation Committee has done an amazing job raising money to prepare a refuge, including licensing the baiji name and image to businesses. They are determined not to let the baiji go extinct in their generation. Adams and Carwardine next go to Mauritius, an ecological battle zone, where Carl Jones' captive breeding center has in ten years restored populations of kestrels, pink pigeons, and fruit bats. Jones claims to be no good at administration or politics but spends much time on both. They have difficulty getting government permission to visit near-by Round Island, "miraculously unspoilt" because getting ashore is nearly impossible. They see a Ramus mania tree thought extinct until in 1981 being protected and cuttings are being cultivated for new plants.

The trained zoologist Carwardine discusses the unknowns that determine whether endangered species survive. In the field some progress is being made, but increasing numbers is no guarantee against extinction. Every species matters because each is an integral part of its environment and one extinction can cause a series of others. Humans are affected as the sources of food, life-saving drugs, and industrial processes disappear. Nature is resilient but know one knows what the limits are. Without these species, "the world would be a poorer, darker, and lonelier place." Adams closes with a parable from the ancient Sybilline books.

Twig Technology

Twig Technology Summary and Analysis

In 1985, science fiction author Douglas Adams meets zoologist Mark Carwardine in Madagascar to find an aye-aye, a rare nocturnal lemur made extinct in Africa by monkeys and now protected by humans on Nosy Mangabé Island. There, against predictions, they see one and Carwardine explains how poaching and loss of habitat are wiping out species on Madagascar and in Africa. Adams needs a few months to finish writing assignments before joining in the search. The first chapter lists the animals to be sought out in this book and suggests that humans are both the cause of trouble and the only solution. Animals naturally adapt to their environment, compete for resources, and the strongest wins. Note that Adams has a penchant for anthropomorphizing—ascribing human thoughts and emotions to animals.

Here Be Chickens

Here Be Chickens Summary and Analysis

Three years later, Adams and Carwardine meet in Australia, where Carwardine tells of ancient Chinese stories about scaly, fiery breathed, man-eating monsters and Western sailors who mark on maps "Here be dragons." The first modern Westerner to meet a dragon lizard crash lands on tiny Komodo Island, the expedition's next destination. Learning from a noted Australian venom expert that it is best not to be bitten, they head to Bali, advertised as the most beautiful place on earth but fully spoiled by and for tourists. Carwardine explains that tourists are examples of "convergent evolution," the process whereby unrelated species develop similar structures under identical conditions —like the aye-aye and long-fingered possum of New Guinea

Two days of frustration with Indonesian red tape later, Adams, Carwardine, and BBC producer Gaynor Shutte fly to Labuan Bajo, where Kiri and Moose, sent by their guide, Mr. Condo, say he is delayed. Sleep is impossible, so they arrive bleary eyed for sea passage to a place so gloomy that one would surely note on a map, "Here be dragons." Adams notices that geography and life forms match, which Carwardine finds crazy. They land and breathe in the "strong, thick, musty smell of Komodo," a government wildlife preserve teeming with tourists. The idea of intrepid adventure vanishes.

Adams studies a sculptured dragon that turns out to be real and sends him running. Kiri has brought four chickens tied together for lunch, but the dragon gobbles one up and drags the others off at high speed. Later, the men wonder why they are horrified by a dragon doing what comes natural—and watching them with cold eyes. Anthropomorphizing animals is wrong (a recurring theme). Every species survives the best it can. When adult dragons eat their young, it prevents the over-hunting of prey, but enough babies survive through an instinct for climbing trees that dragon populations are stable and not endangered. Any species limited to an island, however, is vulnerable to rapid habitat destruction. Humans do not appreciate that the dragons kill by causing lethal septicemia in bites. To run the preserve, the government provides public access without disrupting the environment.

They see mounds of packed earth and vegetation in which megapodes incubate eggs, doubtfully saving labor any better than Adams when he spends hours programming solutions on his computer just in case he ever faces the same query again. After another sleepless night, they slip away from a crowd of American tourists and with a guide walk 3-4 miles through the forest on well-worn paths before coming upon another guard driving a goat to a viewing area above the dragon pen. Sensing feeding time, the dragons gather, as do the tourists. The goat is slaughtered and hung over the pit for tourists to gawk at through binoculars and joke nervously. Learning how coconuts are harvested and split, Adams considers the perversity of the Creator's scheme, which is confirmed by fish jumping out of the water and climbing trees. He is upset that goats are killed for the entertainment of humans, "a bunch of lily-livered rationalising turds."

Carwardine explains that the fish are mudskippers, exploring their environment, like the ancestor of all land vertebrates 350 million years ago. Adams hopes its descendants 350 million years hence do better than human beings have.

Leopard-Skin Pillbox Hat

Leopard-Skin Pillbox Hat Summary and Analysis

With BBC sound engineer Chris Muir, Adams and Carwardine fly to Zaïre via Nairobi on a flight of missionaries, whose benign smiling annoys them. A miserable stopover in the two-roomed shed that serves as the Mwanza "international transit lounge" and another flight with the smiling Christians brings them to Bukavu, where they are handed cards welcoming them and imploring Zaïrois (in English) to be nice to them for the sake of their "touristic future." Every official does his best to make life miserable until paid off in U.S. dollars. The customs area is dominated by a portrait of the President wearing a natty leopard-skin pillbox hat.

After a string of bureaucratic shakedowns, Adams and Carwardine leave Bukavu in a "taxi-like thing" that brings them to a surprisingly comfortable hotel overlooking placid Lake Kivu. Having forgotten sundries, Adams goes exploring and is surprised to find all essentials of modern life available on the street. Next morning, they fly to Goma, are again shaken down in customs, and head to see the mountain gorillas at the Virunga volcanoes. These 280 surviving primates are humans' closest relatives. Those that wander into Uganda are fair-game for poachers. This is "darkest Africa," where Stanley meets Livingston, Christians quarrel, and colonialists exercise extreme brutality. The revolution begins in 1959 and the country's name is changed in 1971. The new bureaucracy is as stifling as the old and runs entirely on bribery.

Bukima village lies in the foothills of the Virungas and is a three-hour trek short of the warden's hut. Porters are happy to lug Adams' extraneous possessions for a price. Guards Murara and Serundori, dressed in military camouflage with black berets and rifles, claim to be ex-commandos now fighting poachers with deadly force. Poaching guerrillas has diminished because zoos no longer accept animals from the wild and macabre "collectibles" are no longer in fashion. Their fellow travelers are stereotypical Germans whom Adams calls Helmut and Kurt but prefers to consider them as Latvians to make them less annoying. Carwardine explains that these gorillas prefer damp cloud forests, unlike lowland gorillas and goes on to explain the difference between primary and secondary rain forests. Adams quickly appreciates the finesse with which Murara and Serundori swing their machetes to clear diverse vegetation.

The party comes upon a gorilla's recently-abandoned bed and Carwardine begins photographing a pile of dung—an inexplicable trait of zoologists. Suddenly, Adams feels as though he is being watched and they spot a massive gorilla 30 yards away. The sensation of seeing a silverback is akin to vertigo, which is equally a fear of falling and the atavistic urge to jump, bird-like from limb to limb. The creature seems contemptuous of those who are photographing its dung. Tradition holds that only the dominant male in a group develops a silver back, but researcher Conrad Aveling assures them that it is just a sign of male maturity. Aveling laughs at the guides' claims of being ex-commandos and warns that they often invent stories for incredulous tourists. They have,

however, succeeded in "habituating" two gorilla groups to human contact, allowing close but brief study.

Once the silverback accepts humans, the rest of the group does too, and there is no trouble as long as everyone treats the others with respect. Gorillas make it clear when they want to be left alone. Tourism is essential to maintaining the preserve but endangers the habitat and exposes animals to diseases against which they have no immunity. Adams and Carwardine are about to give up on seeing gorillas when they come upon a disinterested female with her cavorting infants and a massive, muscular, seemingly contemplative silverback lounging in the bush. Adams finds irresistible the temptation to anthropomorphize as he creeps closer and is shamed to realize that he is patronizingly assuming himself more intelligent. Genetic closeness cannot overcome the cultural distance any better than when rich immigrants return to their ancestors' villages of origin and are misunderstood. What might a great ape teach if there were no language barrier? When the gorilla tires of Adams, it lumbers away.

Three days later, Adams and Carwardine stand atop a termite hill looking at another, distant termite hill, hoping that it is a northern white rhinoceros. They are joined by Chris, a sound engineer from Edinburgh, Kes Hillman-Smith, a rhino expert, and Annette Lanjouw, a chimpanzee expert. The vast Garamba National Park is home to only 22 rhinos, so they look at anything resembling one. They decide it is best to spot them from the air and then approach by Landrover. Garamba Rehabilitation Project adviser Charles Mackie takes them up in an anti-poaching Cessna and after some circling spots a mother and daughter looking like "trotting boulders." The animals are used to airplanes and really only care about how things smell. Nearby they see a male tailless rhino in a standoff with a hyena. Mackie explains that rhinos are myopic and their eyes are so set in the skull that they cannot see anything with both eyes at once.

White rhinos are actually dark gray; "weit" in Afrikaans meaning "wide." They are lighter in color than black rhinos. Both have been hunted for their horns, which are said without justification to be an aphrodisiac. While trade in rhino horn for this purpose has died out, hunting them is still undertaken to produce dagger handles in Yemen. Discovered in 1903, the northern white rhinos are nearly wiped out by 1980. Founded in 1984, the Garamba preserve starts with just 13 animals; it now has 22, protected by a staff of 246 using modern communications and transportation to fend off poorly-paid Sudanese poachers. Success in restoring the southern white population, a separate sub-species, offers hope.

That night, watching hippos lounge in the river, Adams is reminded of the airport officials' "uncomprehending belligerence." Adams fights all night trying to clear his mosquito net and is exhausted as they set out overland to find the rhinos they had spotted from the air. Carwardine explains that the rhinos' reputation for unprovoked aggression is an exaggeration—like fishermen's tales. They are, however, big enough to crush people and vehicles. Mackie spots a rhino and leads them closer by foot, warning that they have sharp hearing and sense of smell. The men must shift constantly to stay out of the wind. The rhino continues grazing until the cameras whir. Adams tries to imagine how a creature could depend primarily on a sense that for humans is strictly

secondary. Only when it catches wind of them does the rhino grow restless and finally hurtles off "like a nimble young tank." Having seen their rhino, Adams and Carwardine again endure senseless bureaucracy and fly to Nairobi.

Heartbeats in the Night

Heartbeats in the Night Summary and Analysis

Vast Fiordland on South Island, New Zealand, makes one want to break into applause. It is too vivid to be real. First seen by Capt. Cook in 1773, the area is a national park still little explored except by helicopter. Bill Black needs to be one of the world's most experienced helicopter pilots the way he flies into the sheer cliff faces to ride the updrafts over ridges. Over the rotor noise Carwardine talks about keas, distinctive mountain parrots that call their own names while flying and take years getting their nests just right before mating. Flying over glaciers that look as though they have been sculpted by a modern master, Adams is too tongue-tied to record his impressions for the radio.

Also aboard the helicopter is quiet Don Merton of the New Zealand Department of Conservation. When Black lands on a narrow ledge, Merton explains the "track and bowl" system they intend to examine. Not since 1987 has Fiordland heard the once-nightly throb of the kakapo's mating call. Since the coming of humans to New Zealand, the bird's numbers have dropped from hundreds of thousands to just 40. Black talks about his work relocating the kakapos to inaccessible locations to save them. Merton is disappointed, unearthing an elderly sweet potato that has not been nibbled by a kakapo in the shallow of the last known track and bowl. The flightless bird may have been killed by a cat like so many others or died of old age. Until recently, birds and bats were the only animals on New Zealand. Facing no predators, they abandon flight and develop strong leg muscles instead. European settlers introduce cats, dogs, stoats and possums, which easily kill the native birds.

Kakapos are extremely heavy and unworried. Their defense is to climb trees and crash to the ground when they try to jump and flee. They also refuse to abandon their eggs to a predator. It also does not help that they are solitary animals and the males' mating calls appear to repel the females (like discotheque behavior). The males dig and camouflage shallow depressions with amazing acoustics. When the mating season comes, they sit and boom using enormous air sacs. The sound travels for miles like a sub-woofer. The female cannot distinguish the direction and gets frustrated. The wide variety of other sounds a kakapo can make baffles zoologists; it is like Pink Floyd outtakes. Females' sex drive is intense but comes only every two years when a particular plant bears fruit. The males get frustrated enough to ravish hats left around and even possums. When the rare egg is laid, the stoats usually eat it. The system is compared to the British motorbike industry, which ignores consumer tastes and is surprised when Japanese bikes take over.

Days before the Fiordland expedition on the flight to New Zealand, Adams dreams he is spread-eagled on pink and blue boulders on a remote beach, and in the airport, his boots are confiscated and returned spotless. New Zealand is paranoid about foreign bacteria. He dreams it again during and after a helicopter flight to Little Barrier Island.

Carwardine is amused but rushes him to tea with the island's warden Dobby and his wife Mike, who are hoping to lead them to live kakapos. Two islands, Stewart and Codfish have been cleared of predators and every kakapo that can be trapped is airlifted there for study and protection by the New Zealand Department of Conservation. The DOC is allowing them a short visit only because good publicity may help the project. They will be led by Gary "Arab" Aburn, kakapo tracker and his dog, Boss. Carwardine talks into the microphone about the amazing variety of birds in Dobby and Mike's garden, while Adams considers how little regard he has for kakapos, creatures that should take flying for granted but choose to ground themselves. Unlike lethal ostriches, kakapos are harmless, "innocent and solemn." He wants to see one and warm up to it.

DOC eventually grants permission, and Adams and Carwardine join Aburn and Boss for a helicopter flight to Codfish Island, the heavily-protected home to many nearly-extinct bird species. Their welcome is cold, but Adams finds this refreshing after the excessive New Zealand geniality they have been enduring. After lunch, Arab and Boss lead them into the rotting, sodden forest. There is plenty of recent scent. After dark, Arab explains that kakapos are nocturnal, so they will resume searching at 5 AM. Hung-over and sore, Adams is in no mood but follows the others. Arab finds evidence of fresh kakapo activity but notes that one can be almost on top of one without seeing it. Falling behind, Adams, Carwardine, and Shutte arrive to find Arab cradling a kakapo in a pose reminiscent of Madonna and Child. The parrot is comforting itself by chewing on Arab's finger. "Ralph" (No. 8-44263) is in good condition and close to booming, which means it has established itself a year after resettlement. Arab releases it before water can penetrate its feathers and chill it. After this discovery, the DOC moves the kakapo program to the highest priority. They need to find more females and get them to breed to stabilize the population. Genetic engineering may be needed.

Blind Panic

Blind Panic Summary and Analysis

Water spiraling down drains and telephone dials working backwards in New Zealand are disorienting, but China, where both operate as one assumes they should, is said to be utterly baffling, so Adams flies there uncomfortably. Carwardine asks why he buys so much duty-free aftershave. He has no answer. They go to China to see 200 reincarnations of a drowned princess, the Yangtze River dolphin, or baiji. People along the 200-km. stretch of the noisy filthy river centered at Tongling in Anhui Province are trying to save the endangered animals. They first spend a few days acclimatizing in Beijing. Carwardine assumes they will not be able to meet with Prof. Zhou, the baiji expert in Nanjing, but keeps trying. As they visit the Great Wall, Adams recalls visiting the Gold Pavilion Temple in Kyoto, Japan, and being assured that while it has burnt down and been rebuilt repeatedly it is the original temple. He thinks that applies also in Beijing, where tourists swarm and are catered to. They visit massive Tiananmen Square months before it attains infamy and are amazed by the sense of safety in a public place. They join the queue to pass by Chairman Mao's body. Adams is struck by the Western music that is piped all day at the center of Chinese culture. Someone seems to be missing the point. They go next to Shanghai, where the famous Peace Hotel has grown shabby and the World Famous jazz of the 1930s has degenerated to the style of Richard Clayderman but sounding wrong to Western ears. Adams realizes that China in general confuses and overwhelms him.

The half-blind baiji, immersed in a filthy river with no visibility must feel the same way. Worse, the engine sounds from vessels of all sizes interfere with its echolocation, which substitutes for sight. It must be bedlam—like a blind or deaf man in a discotheque. They are constantly hit by boats, mangled by propellers, and tangled in fishermen's nets. Finally, pollution is poisoning their food supply. Adams and Carwardine decide to record what the Yangtze sounds like underwater. This takes them on a great adventure to buy condoms ("rubberover") to seal the microphone. Amazingly, the streets are filled with bicyclists constantly ringing their bells and avoiding close calls with one another and motor traffic. Close scrapes are not a consideration because the Chinese do not worry about privacy or personal space. Adams has been warned that communicating with the Chinese is difficult because they find it safer to ignore Westerners. When they board a passenger ferry and get to the level where their protected microphone encounters water, they discover that the river sounds amount to white noise.

Adams and Carwardine find Prof. Zhou at Nanjing University. He escorts them to dinner at the Jing Ling Hotel and is happy that they want to help save the dolphin. This will be difficult because of conditions in China, but he will contact people at the Tongling conservation project. He explains the problems that the dolphins, only recently discovered (1914), are having in their quickly deteriorating habitat. In the late 1950s Zhou finds them being sold for food when caught in nets. When an Agriculture al

Commissioner investigates, it is found that dolphin deaths are common. Zhou recommends setting up a reserve in the river and in five years it is nearly complete.

Adams and Carwardine are scared to death during a car ride to Tongling, 120 miles away. It is another bleak city. They give up trying to swallow Thousand-Year-Old eggs but drink the beer, whose logo is the Lipotes vexillifer—the baiji. They are staying in Baiji Hotel. Chugging upstream in a small boat in the shallows, which the baiji favor, they see nothing. Their guide, Mr. Ho, tells them that when the baiji comes up to breathe it takes less than a second. Finless porpoises, also endangered but numbering some 400, come out of the water when they breathe. Ho sees one of them. Adams is again appalled that intelligent animals live under such conditions.

At the Hydrobiology Institute in Wuhan Adams and Carwardine meet officials of the Tongling Baiji Conservation Committee, who have been alerted by Zhou. Carwardine tells them concisely who they are and asks questions that relax them. They are building a "semi-nature reserve," confining the dolphins to a section of the river in an elbow-shaped bend of the river. Fences are being built along with an artificial hospital and holding pools. A fish farm is being built upstream. They have raised money from many sources for the expensive undertaking and have licensed the baiji to many businesses. The Chinese are gratified to be complimented by supposedly expert foreigners. Tongling has been named an open city, so income from tourism is expected. The people are determined not to let the baiji go extinct during their generation. Adams catches a glimpse in this of the real Chinese mind and is willing to give Thousand-Year-Old eggs a second try.

Rare, or Medium Rare?

Rare, or Medium Rare? Summary and Analysis

Richard Lewis gets passengers to answer his questions by watching them rather than the road until they do. An ornithologist, Lewis asks Adams and Carwardine why they have come to Mauritius to see a fruit bat on nearby Rodrigues rather than tour his captive breeding center run by Carl Jones. Mauritius is an ecological battle zone. Lewis shows them around the compound that houses "some of the rarest, sexiest birds in the world." Pink, a Mauritius kestrel (falcon), has "imprinted" on Jones at hatching and believes itself a human. He has nothing to do with fellow kestrels and lacks survival skills. Female kestrels are belligerent, so they collect Pink's semen to inseminate them artificially.

Jones calls the breeding center his greatest failure. Written off as a school boy, he collects animals but somehow makes it to college. Hearing Prof. Tom Cade lecture about falcons, he makes up his mind to do something about saving the rarest falcon on Mauritius, which is down to a single breeding pair. The authorities are tired of wasting resources on it and hire Jones to shut down the facility. Ten years later, he has restored populations of kestrels, pink pigeons, and fruit bats. He claims to be no good at administration or politics but spends much time on both, raising and accounting for money. His center temporarily houses a rare breed of French rabbits from Round Island, where they were being exterminated to protect native plants and animals—the largest concentration of rare species on earth.. He also cares for Rodrigues fruit bats, which require a special diet. Many species on Mauritius and Rodrigues are in a "last-ditch state." Because humans practice subsistence farming, forests are continually cleared, destroying habitats and affecting the watershed.

Sugar is a major cash crop on Mauritius and its growth causes major ecological problems. Naturalists distinguish "endemic" species, which are found nowhere else on earth but their native area, from "exotic" ones, which are introduced from elsewhere. On islands, exotics cause trouble because they have no natural competition and thrive at the expense of native species. "Island ecologies are fragile time capsules." Black ebony trees have been wiped out for lumber; sugarcane is everywhere, and deer hunting interests are thinning surviving forests. Jones' kestrels are reintroduced to the wild in the Black River gorges inside the Medine sugar estate. Jones has an agreement with the gatekeeper, James. Jones releases the kestrel that he has come to feed in 1985 after training it to take dead mice. They need the extra food to lay more eggs. When he finds nests, Jones borrows them to incubate artificially for three weeks before a week's finishing under the bird. Kestrels raised in captivity have to be kept constantly occupied visually to thrive later in the wild. They watch Jones' kestrel perform differential calculus to catch the dead mice he throws to them until they are "fed up."

Lewis gets "fed up" that night when a Mauritian friend and her supercilious French boss visit. Jacques cannot figure out why the BBC wants to tape a program on local wildlife,

as "there is nothing here." Lewis talks with restraint about some of the rarest birds n the world and his and Jones' efforts to protect, study, and breed them. Finally, Lewis says that if there are no interesting birds on Réunion Island it is because the French have shot them. When the insulted Frenchman has gone, Lewis explains about releasing 20 pink pigeons back into the wild only to become casseroles. In the 1950s, Mauritius is drenched in DDT, which enters the food chain. Mauritius is pounded by cyclones. Only 10% of the forest has survived logging and burning. It has been spared only nuclear testing.

Round Island near Mauritius is "miraculously unspoilt" because it lacks beaches and harbors and the waves make getting ashore over rocks almost impossible. Adams nearly drowns clambering off the dinghy as the last man ashore. While the others explore, he rests against a palm tree named "Beverly," one of eight of that species remaining in the world. Because no rats have ever gotten ashore, Round Island (which is not round) preserves unique species that have perished on Mauritius. Goats and rabbits introduced by sailors 150 years earlier have destroyed the hardwood forest, leaving the cratered island looking barren, but a few unique palms and grasses survive. The "tropical island paradise" is a fantasy long degraded. The dodo is a dove that evolves on Mauritius in the lack of predators to be so remarkably large that it cannot fly. It is a "Phoenix of Arabia." Giant tortoises are eaten to extinction but the last dodo is killed for fun, ca. 1680, making its loss all the sadder.

On Rodrigues, botanist Wendy Strahm shows them a Ramus mania tree thought to be extinct until in 1981 a school child reports one growing in her garden. It is tested and found to be a wild coffee plant. Circles and circles of fencing and barbed wire are erected to keep people from taking souvenirs. They are trying at Kew Gardens to root and cultivate new plants from cuttings. Adams and Carwardine watch hundreds of rare fruit bats take to the skies near this protected tree and Adams worries that humanity is in trouble.

Mark's Epilogue

Mark's Epilogue Summary and Analysis

The trained zoologist finally speaks in his own voice, discussing the unknowns that determine whether endangered species survive so that future generations get a chance to see them. In the field some progress is being made, but increasing numbers is no guarantee against extinction. The North American passenger pigeon, once the commonest bird on earth, is hunted to extinction in 50 years. Poachers have reduced 1.3 million African elephants to 600,000. On the other hand, the Juan Fernandez fur seal, reduced from millions to 100 in 1965, now stand at 3,000, and Chatham Island robins, reduced to one pregnant female number over 50. Additional female kakapos have been found and relocated to Codfish Island; one chick has hatched, and another egg has been found on Little Barrier Island.

In Zaïre three baby northern white rhinos have been born. The government refuses to let the animals be taken into captivity, where they do not breed successfully. On Mauritius, the kestrels are doing well but wild pink pigeons have dropped to ten. Those returned to the wild after being bred in captivity appear not to have been eaten. The echo parakeets are trying to breed. Rodrigues fruit bats have passed the 1,000 mark. In China, to celebrate the dolphin program, factory workers unfortunately honored the organizers by cooking a pregnant Yangtze dolphin. The chances of saving them, despite the enormous investment, is slim and they are considering a program of semi-captivity at Shi Shou.

No one knows how many of the world's 1.4 million discovered species and suspected 30 million are nearing extinction. Less is known about the surface of the earth than about the moon; many species may perish hidden before they are discovered. Two new lemur species have been discovered on Madagascar and their place in the ecology is unknown. Scientists hurriedly make notes on them while they live—like someone jotting down titles of books in a burning library. Extinctions have occurred for millions of years, but the rate is accelerating as the human population of 5 billion fights for space. The rain forests are particularly endangered. There are dedicated people in every part of the world working to save species, but they are alone.

Every species matters because each is an integral part of its environment—one extinction can cause a series of others. Humans are affected as the sources of food, life-saving drugs, and industrial processes disappear. Nature has considerable resilience but no one knows what the limits are. Without these species, "the world would be a poorer, darker, and lonelier place."

Sifting through the Embers

Sifting through the Embers Summary and Analysis

Traveling the world looking at nearly-extinct species helps Adams appreciate the story of the Sybilline books, a tale that in boyhood disturbs him. A thriving ancient city is visited by a strange, old beggar woman who tries for a single sack of gold to sell the people twelve large books containing all of the knowledge and wisdom in the world. When they laugh, she burns half and leaves. After a hard winter she returns offering to sell the remaining six for two sacks of gold. When they find the inflated price outrageous, she burns half and leaves. The next winter brings famine and disease and the people refuse to pay four sacks of gold for three books. She burns two more and leaves. On her last visit, they pay 16 sacks of gold for one book, hoping they can survive on one-twelfth of the knowledge and wisdom that had once been in the world.

Characters

Douglas Adams

An award-winning writer of humorous science fiction adventures, (The Hitchhiker's Guide to the Galaxy, Dirk Gently novels) Adams is responsible for the lion's share of Last Chance to See. He is sent in 1985 by Observer Colour Magazine to Madagascar to team with noted zoologist Mark Carwardine of the World Wildlife Fund to publicize the near extinction of the aye-aye, a nocturnal lemur. Having just finished an author tour in America, Adams flies to Madagascar via Paris, laden with photographic gear and other paraphernalia and is sick of the "American Expressness" of his recent travels. This is helpful for primitive life in the bush.

In Madagascar, Carwardine inspires Adams with stories of other endangered species and arranges additional trips while Adams completes existing writing commitments. Adams admits his reputation for being a "gadget freak" and enjoys programming his computer even when the task at hand does not require it. He does not believe in God and resents the idea of missionaries (particularly flashy American ones) forcing their beliefs on native peoples. A pack-rat, he carries to Zaïre the collected works of Dickens. En route to China he impulsively buys duty-free after shave for which he has no need.

In their search for the kakapo in New Zealand, Adams admits to having little feeling for birds but consistently wrestles with anthropomorphizing other species, particularly gorillas. He knows their experience is utterly unlike the human's but seems unable to resist. He speculates why a humorist is involved in the project and the answer is probably that his light touch makes the serious subject palatable to a large audience.

Mark Carwardine

A tall, dark, laconic, and usually mild and genial man, Carwardine is an experienced and knowledgeable zoologist, serving at the time of his adventures with Douglas Adams as a Conservation Officer with the World Wildlife Fund. They first meet in 1985, in Madagascar on a mission to see one of the few surviving aye-ayes of Madagascar. Carwardine describes other situations they should investigate and uses the time Adams needs to complete previous writing commitments to make arrangements world-wide. After publication of Last Chance to See, Carwardine becomes a freelance zoologist, writer, and photographer, based in Britain.

Credited as co-author, Carwardine occupies the back stage, occasionally being used as a foil for Adams' humor and providing technical information about evolution and the mechanisms of extinction. During the flight to Zaïre, Carwardine is shown disliking missionaries with particularly vehemence and turning uncharacteristically tense and taciturn. The reasons are little examined, since Adams shares the sentiment. Working for the World Wildlife Fund, Carwardine in 1985 is teamed with author Douglas Adams

to publicize the near-extinction of the aye-aye of Madagascar. Carwardine makes all arrangements for their trips.

Carwardine contributes an Epilogue in which he discusses the unknowns that determine whether endangered species survive so that future generations get a chance to see them or if the species perish. He sees some progress being made, but increasing numbers is no guarantee against extinction.

Carl Jones

A brilliant but mad Welshman in his late 30s, Jones hates the media for twisting his words but loves birds to the point of obsession. He has worked his adult life saving rare ones in the Philippines and Mauritius, which is truly an ecological war zone Jones runs a breeding center in a village on the Black River. He jokes that the breeding center is his greatest failure.

Written off as an unintelligent school boy, Jones collects animals in his home and against expectations makes it to college. Hearing Prof. Tom Cade lecture at Oxford about the work Americans are doing breeding falcons in captivity, Jones makes up his mind to do something concrete about saving the rarest falcon on Mauritius, which is down to a single breeding pair. The authorities by then have grown tired of wasting resources on this project and hire Jones to shut down the facility.

Ten years later, Jones has restored populations of kestrels, pink pigeons, and fruit bats. Some are trained to survive in the wild, and Jones takes Adams and Carwardine out to watch him feed one kestrel in order to improve the chances of reproduction.

Gary (Arab) Aburn

A freelance kakapo tracker working for the New Zealand Department of Conservation (DOC), Aburn takes Adams and Carwardine from Little Barrier Island to Stewart and Codfish islands in search of the elusive parrot. The DOC has exterminated all predators on the three islands. Aburn is tall, rangy, weather-beaten, with a long, grizzled beard. He works with his specially-trained (and muzzled) dog, Boss. Arab turns out to be charming. When they corner a kakapo, Aburn holds it tenderly, like a Madonna and Child picture and allows it to cling to his finger with a beak that could easily sever it.

Conrad Aveling

A leading gorilla researcher in Zaïre, Aveling tells Adams and Carwardine that all males develop silver backs upon reaching maturity and debunks the stories told by the ex-commandos who accompany them. He has patiently "habituated" two gorilla groups to human contact, allowing close but brief study.

Bill Black

The cuddly, curmudgeonly helicopter pilot who flies Adams and Carwardine into Fiordland, New Zealand. Black enjoys scaring them by flying into the sheer cliff faces to ride the updrafts over ridges. Black helps relocate birds to a sanctuary and hates tourists.

Kiri, Moose, and Mr. Condo

Adams and Carwardine's contact in Indonesia, Mr. Condo is perpetually unavailable and sends Kiri and Moose (short for Hieronymus) to meet them in Labuan Bajo, the staging place for their visit to Komodo Island. Kiri arranges for his father to take them aboard his fishing boat, the Raodah, to the wildlife preserve. Kiri brings four chickens along, knowing that Westerners prefer it to fish.

Dobbie and Mike Dobbins

The warden of Little Barrier Island and his wife, the Dobbinses have lived eleven and a half years in isolation, guarding against the re-introduction of predators by inattentive tourists. Mike's wife is a "cheerful, sprightly, and robust woman," who has manicured an acre of land into a garden. Dobbie first arrives as part of the feral cat-killing program and stays on as warden. He is scheduled to retire in 11 months, which is a depressing thought. Their son Phred is warden on Codfish Island.

Helmut and Kurt

Two stereotypically superior young German tourists in Zaïre who accompany Adams and Carwardine on their search for mountain gorillas, Helmut and Kurt are nicknames that Adams assigns, while also turning them into Latvians in order to be less annoyed by their attitudes.

Kes Hillman-Smith

Hillman-Smith is a rhinoceros expert who guides Adams and Carwardine in their search on the savannah for the northern white rhino in Zaïre. She is a formidable woman, lean, fit, and beautiful. Her husband, Fraser, is a conservation manager. They live in a rambling house that they build themselves on the edge of the Garamba River. Her only worry about animal visitors are crocodiles.

Richard Lewis

A Mauritius-based ornithologist, Lewis gets passengers in his Landrover to answer questions by watching them rather than the dangerous road until they do. Lewis argues

against Adams and Carwardine wasting time on seeing a fruit bat on nearby Rodrigues and introduces them to Carl Jones, who is protecting truly endangered birds on Mauritius.

Charles Mackie

A senior adviser to the Garamba Rehabilitation Project in Zaïre, Mackie is a thin, intense but taciturn man who flies Adams and Carwardine over the preserve in search of northern white rhinos. His distracted piloting leaves them gibbering with fear.

Chris Muir

Muir is a Scottish BBC sound engineer, who accompanies Adams and Carwardine to Zaïre and China.

Murara and Serundor

Self-proclaimed former commandos hunting poachers in Zaïre, Murara and Serundon impress Douglas Adams with the precision with which they swing their machetes to clear vegetation, but they also pass off invented stories to incredulous tourists.

Gaynor Shutte

Shutte records Adams and Carwardine's exploits in Indonesia and for a BBC radio series.

Dr. Struan Sutherland

An expert in venom in Melbourne, Australia, Sutherland is "bored silly" with poisonous animals and much prefers hydroponics. As Adams and Carwardine prepare to visit Komodo Island, they visit to get an anti-venom kit, but Sutherland has developed the kits only for Australian species. His best advice is to avoid being bitten and if bitten not to suck on the wound or apply to tight a tourniquet. Both are lethal.

Prof. Zhou Kaiya

The premier expert on the endangered baiji (Yangtze River dolphin), Zhou is a polite, kindly man about 60 years old, working at Nanjing University. After an Agricultural Commissioner in the late 1950s finds that dolphin deaths are common, Zhou recommends setting up a reserve in the river and in five years sees it nearly complete.

Objects/Places

Aye-aye

Nocturnal lemurs found only on Madagascar, the aye-aye die out in Africa when monkeys, whose use of twigs better enables them to survive, take over their habitats. Aye-aye thrive on the island that separates them from the mainland but are again threatened when humans arrive. The few known to exist are found in a refuge on the tiny rain-forest island of Nosy Mangabé. The aye-aye looks as though it has been "assembled from bits of other animals." The most extraordinary features are a middle finger that looks like a long, dead twig and enormous eyes.

Baiji

The Yangtze River dolphin, Lipotes vexillifer, is in legend the reincarnation of a drowned princess, first discovered in 1914 in a lake and since the 1950s encountered along a 200-km. stretch of in the crowded, polluted Yangtze River centered at Tongling in Anhui Province. In the late 1950s the baiji begin being sold for food when caught in nets until an Agricultural Commissioner investigates and finds that dolphin deaths are common. Prof. Zhou recommends setting up a reserve in the river, and in five years it is nearly complete. The extreme pollution and noise of the river, China's major thoroughfare, so shatters the dolphin's ability to organize its world that it is unlikely it can survive in the wild.

China

Adams and Carwardine visit China specifically to see the endangered Yangzte River dolphin. Adams describes in colorful detail the culture of Beijing, including the pilgrimage to Chairman Mao's mausoleum in Tiananmen Square (before the Square gains notoriety) and the surprise of hearing Western music blaring everywhere. Adams contemplates how bicycle traffic demonstrates that Chinese are unconcerned with personal space. He is disgusted by Thousand-Year-Old eggs, a Chinese delicacy until he sees what government, industry, scientists, and people are doing to give the Lipotes vexillifer—the baiji—a chance to survive, licensing merchandising to raise needed funds and fencing in a portion of the river with hospital and feeding provisions. The Chinese dedication to not letting the species go extinct in their lifetime is so inspiring that Adams gives the eggs a second try.

Indonesia

Heading for Komodo Island to see the legendary dragon lizards, Adams and Carwardin learn about Indonesian bureaucracy and the value of patience. Their first stop is Bali, advertised as the most beautiful place on earth but fully spoiled by and for tourists. They

are forced to spend the night observing the fruits of tourism before flying out via Bima and Labuan Bajo. Balis' Denpasar Airport is a "fresh eruption of hell" because in Indonesia, "confirmed" means nothing and flights occur only every few weeks. Ticket officials ask, "Moment," and disappear for various reasons and many never return. Government officials often usurp seats. Forced to stay overnight, the travelers discover that pointing out animals to tourists is good business on the island.

On Komodo they discover that there is no such thing as intrepid exploration. The lizards are penned in an enclosure and fed captive goats, catering to tourists, which also seems to Adams an abomination. Entirely wrong-sized for a lizard, the Komodo grows to twelve feet long and stands a yard high. When it can find nothing to scavenge, it eats humans, biting and waiting for its toxic saliva to cause death by septicemia. Douglas Adams struggles with why the lizard doing what nature has designed it to do creates such a negative reaction in him. On Komodo they also see megapodes' conical mounds of packed earth and rotting vegetation in which their eggs incubate, which reminds Adams of his own "labor saving" hours computer programming.

Madagascar

A large island off the east coast of Africa in the Indian Ocean, Madagascar is the first of Adams and Carwardine's stopping places in search of nearly-extinct species. The capital of Madagascar is Antananarivo. The island is colonized—plundered—by the French at the end of the 19th century and gains independence in the 1960s. Madagascar is home to 21 lemur species and other species found nowhere else in the world. The rarest lemur, the Aye-aye, has been moved to a refuge on a small rain-forest island off the northeast coast, Nosy Mangabé.

Mauritius and Rodrigues

Originally colonized by the Dutch, then taken over by the French, lost to the British after the Napoleonic wars, and currently an independent part of the British Commonwealth, Mauritius is a small island in the Indian Ocean east of Madagascar. Rodrigues is an even smaller dependency. Adams and Carwardine want to see the world's rarest fruit bat on Rodrigues but are convinced by ornithologist Richard Lewis to spend time at his bird sanctuary, which has successfully brought back several species from the brink of extinction.

On Rodrigues they see a Ramus mania coffee tree thought to be extinct until in 1981 a school child reports one growing in her garden. Circles and circles of fencing and barbed wire are erected to keep people from taking souvenirs. They are trying at Kew Gardens to root and cultivate new plants from cuttings.

New Zealand

Adams and Carwardine visit New Zealand hoping to see the nearly extinct kakapo parrot. Their first stop is in the vast Fiordland on South Island, a land of ice and rock that seems too vivid to be real. First seen by Capt. Cook in 1773, the area is a national park still little explored except by helicopter. Not since 1987 has Fiordland heard the once-nightly throb of the kakapo's mating call. Since the coming of humans to New Zealand, the bird's numbers have dropped from hundreds of thousands to just 40. Individual birds when found are relocated to inaccessible locations to save them. European settlers introduce cats, dogs, stoats, and possums, which easily kill the native birds. Two islands, Stewart and Codfish have been cleared of predators and every kakapo that can be trapped is airlifted there for study and protection by the New Zealand Department of Conservation.

Northern White Rhino

The endangered species that draws Adams and Carwardine to Zaïre, northern white rhinos are actually dark gray; "weit" in Afrikaans meaning "wide," referring to their mouths. They are lighter in color than black rhinos. Both have been hunted for their horns, which are said without justification to be an aphrodisiac. While trade in rhino horn for this purpose has died out, it is still undertaken to produce dagger handles in Yemen. Discovered in 1903, the northern white rhinos are nearly wiped out by 1980. Founded in 1984, the Garamba preserve with just 13 animals has brought them back 22, protected by a staff of 246 using modern communications and transportation to fend off poorly-paid Sudanese poachers. Success in restoring the southern white population, a separate sub-species, offers hope.

Round Island

A non-round island near Mauritius Island in the Indian Ocean, Round Island is "miraculously unspoilt" because it lacks beaches and harbors and the waves make getting ashore over rocks almost impossible. Douglas Adams nearly drowns clambering off a dinghy, and while the others explore, he rests against a palm tree named "Beverly," one of eight of that species remaining in the world. Because no rats have ever gotten ashore, Round Island preserves unique species that have perished on Mauritius. Goats and rabbits introduced by sailors 150 years earlier have destroyed the hardwood forest, leaving the cratered island looking barren, but a few unique palms and grasses survive.

Zaïre

Formerly known as the Belgian Congo, Zaïre is where Stanley meets Livingstone and Catholic and Protestant missionaries for centuries seek to convince the natives that the other religion is wrong. Traders and slavers follow missionaries, and colonial officials

are nowhere in the world outdone in brutality. In 1959, the capital, Kinshasa is filled with blood and independence is granted. The names is changed to Zaïre in 1971.

Adams and Carwardine fly to Zaïre to see the 22 surviving northern white rhinoceroses left in the wild. Arriving, they learn that officials are dedicated to making visitors' life miserable until they are duly compensated in U.S. dollars. The customs area is adorned with a picture of the President, Marshall Mobutu Sese Seko Kuku Ngbendu Wa Za Banga, wearing a leopard-skin pillbox hat.

Before flying to the vast Garamba National Park, home to the rhinos and other endangered species, they visit the mountain gorillas at the Virunga volcanoes. They, too, have suffered from poaching but many groups are habituated to short visits by humans.

Themes

Poaching

Poaching is one of the major ways in which species have become extinct or drawn precariously close to extinction before governments intervene. Rarely are animals targeted as a food source, although on Réunion Island Frenchman slaughter pink pigeons hatched in captivity and reintroduced into the wild to make casseroles. More often, poaching serves human vanity, most often that of rich foreigners whose middlemen pay piteously small fees for the carnage.

In Zaïre, Adams and Carwardine see mountain gorillas at the Virunga volcanoes. The preserve spans three nations, and those gorillas that wander into Uganda remain fair-game for poachers. In Zaïre the 280 surviving primates who are humans' closest relatives, are guarded with deadly force. Poaching guerrillas has diminished because zoos no longer accept animals from the wild and macabre "collectibles" like stuffed hands are no longer in fashion.

The authors fly next to the vast Garamba National Park, home to the last 22 northern white rhinos. Discovered in 1903, this species is nearly wiped out by 1980. Founded in 1984, Garamba begins with just 13 animals. It employs a staff of 246 who use modern communications and transportation to fend off poorly-paid Sudanese poachers. The rhinos are hunted for their enormous double horns, which for ages have been said without justification to be an aphrodisiac. While trade for this purpose has died out, it is still undertaken to produce dagger handles in Yemen. The end users pay enormous prices, but the poachers who risk their lives receive paltry amounts. Bribing them not to shoot rhinos does no good, because they accept fees from both the government and the middle men.

Tourism

Adams and Carwardine encounter tourists, mostly North American and European, everywhere they travel—except when strictly excluded from protected areas by government edicts. Bali, advertised as the most beautiful place on earth is fully spoiled by and for tourists. Carwardine, the trained zoologist, explains to the humorist Adams that tourists provide examples of "convergent evolution," the process whereby unrelated species develop similar structures under identical conditions. They have previously seen on Madagascar the aye-aye, who has a single long finger used for digging out insects. It is totally unrelated to the long-fingered possum of New Guinea, which develops a similar digit because there are no woodpeckers there to compete for food.

Adams' and Carwardine's intrepid adventure on Komodo Island to see the dragon lizards of fearsome reputation find themselves surrounded by tourists helicoptered into the government preserve. Most of the animals are penned in and surrounded by

bleachers so tourist groups can watch them fight over captive goat corpses dangled overhead. The spectacle makes Adams wonder about the perversity of the human species. Tourism, however, funds the preservation of this endangered species. They find the same necessity in China, where government, business, science, and ordinary comrades join in a grand project to protect Yangtze River dolphins from collision with boats and fishing nets. They have sold branding rights to many products to raise funds and hope for tourist dollars to further the nearly hopeless project. In Zaïre, tourism is essential to maintaining the preserve but also endangers habitats and exposes animals to diseases against which they have no immunity. A balance has to be struck.

Governments in New Zealand and Mauritius are loath to allow the authors to set foot on smaller islands set aside as preserves for endangered animal and plant species. Island ecologies are particularly fragile, and these have been systematically purged of the descendants of predators introduced by European explorers centuries before. Virtually no watercraft are free of rats and a sightseeing family's pregnant cat escaping could bring disaster. Eventually Adams and Carwardine are allowed to visit for the value of publicity for the strict programs. Perhaps the most pathetic thing they see is the unique example of a wild coffee bush that has to be surrounded by barbed wire and guarded to prevent tourists from taking souvenirs while botanists work to propagate cuttings.

Anthropomorphism

Anthropomorphism means the attribution of human characteristics, motivations, and behaviors to animals (and other elements in nature). Primary author Douglas Adams has a penchant for anthropomorphism, first seen when an aye-aye lemur looks at him with "serene incomprehension," which he returns in kind. He regularly reminds himself that it is irrational but is rarely able to resist. The only consistent exception comes with birds, for whom he feels no natural affinity. Forming the opinion that fat, flightless kakapos are "innocent and solemn," he wants to see one and warm up to it.

Adams has a crisis on Komodo Island, where the dragon lizards are too big and deadly for his comprehension. He wonders why it doing what comes naturally—eating dead prey—so upsets him and focuses on its watching him with cold, lifeless eyes. He reminds himself that every species survives the best it can, and while humans do not eat their young, this practice works to maintain the lizards' population at a sustainable level. Adams is, however, upset that goats are killed for the entertainment of tourists, "a bunch of lily-livered rationalising turds."

The hardest animal to resist anthropomorphizing is the mountain gorilla of Zaïre, humans' closest genetic relative. They succeed in viewing up close a "habituated" group. The female is disinterested and her infants cavort in trees that seem too slender to support them. Adams creeps within 18 inches of a massive, muscular silverback who he sees lounging in the bush. The "awesome" male appears contemplative, examining his fingernails, flicking away bits of dirt. When Adams invades his space, the gorilla backs off a few inches and watches him curiously. Adams is ashamed of realizing that he patronizingly assumes himself more intelligent than the animal. Genetic closeness

cannot overcome the cultural distance any better than when rich immigrants return to their ancestors' villages of origin and are misunderstood. What might a great ape teach if there were no language barrier? When the gorilla tires of Adams, it lumbers away.

Considering the myopic northern white rhino, Adams tries to imagine how a creature could depend primarily on smell, a sense that for humans is strictly secondary. Only when it catches wind of them does the rhino grow restless and finally hurtles off "like a nimble young tank." Adams has the most sympathy for the half-blind baiji, immersed in the filthy, congested Yangtze River where its echolocation, which substitutes for sight, is affected by the commotion. Adam figures that it must be bedlam—like a blind or deaf man in a discotheque.

Style

Perspective

Last Chance to See teams an award-winning writer of humorous science fiction adventures and an experienced zoologist on an adventure searching for nearly-extinct animals for a BBC program. Douglas Adams wonders what he is doing there; one can perhaps assume his fame as author of The Hitchhiker's Guide to the Galaxy and the Dirk Gently novels cause him to be selected because of his established reader base. He admits to little feeling for birds and unscientifically anthropomorphizes animals' thoughts and emotions. Adams is responsible for the lion's share of Last Chance to See.

Mark Carwardine at that time serves as a Conservation Officer with the World Wildlife Fund. He mostly stays in the background, occasionally emerging as a foil for Adams' humor and providing technical information about evolution and the mechanisms of extinction. Carwardine contributes an Epilogue in which he discusses the unknowns that determine whether endangered species survive so that future generations of human beings get a chance to see them or perish. He sees some progress being made, but increasing numbers is no guarantee against extinction.

The intent of the authors and of the British Broadcasting Corporation which sponsors most of their travels is to bring to the attention of a broad audience the challenges of rescuing endangered species from the brink of extinction. The bottom-line message is that humans are the greatest hazard, but Adams' humorous take on government bureaucrats, tourists, and missionaries keep it from being a frontal attack. Adams writes as a wide-eyed layman and inserts bits of science in layman's terms and usually with a humorous twist. The reader comes away knowing a good deal more about the problem than before and perhaps willing to contribute to the cause as the authors suggest.

Tone

Last Chance to See deals with a subject of deadly seriousness—the extinction of animal and plant species. Co-author Mark Carwardine, a trained zoologist with the World Wildlife Fund, writes in his Epilogue that every species matters because each is an integral part of its environment; one extinction can cause a series of others. Humans are affected as their sources of food, life-saving drugs, and industrial processes disappear. Nature has considerable resilience but no one knows what the limits are. Without these species, "the world would be a poorer, darker, and lonelier place."

The overall tone of the book, however, is provided by the award-winning humorist Douglas Adams, author of The Hitchhiker's Guide to the Galaxy and the Dirk Gently novels. Adams does the lion's share of the writing, incorporating tidbits of science from Carwardine and other specialists they meet along the way. He ties it together with a

travelogue heavy on poking fun at human foibles (his own included) with no trace of bitterness.

When he comes in close contact with nature, Adams inevitably anthropomorphizes creatures and then wrestles with himself for this natural but irrational behavior. Few readers will not identify with this or find it enlightening. Adams is ironic, irreverent, and compassionate. The objective facts come from experts but are put forth to the reader subjectively. Appended to the book are addresses to which readers can send donations to help preserve endangered species.

Structure

Last Chance to See consists of a brief Preface that essentially acknowledges help in sponsoring the journeys co-authors Douglas Adams and Mark Carwardine undertake in 1985 and 1988-89 and of which Adams relates in this volume. At the end of the book are formal "Acknowledgments," an alphabetic list of personal and corporate names, and "One More Chance," names and addresses of environmental agencies to which the reader is encouraged to contribute.

The body of the book consists of eight unnumbered but titled chapters. Each chapter examines endangered species in a particular part of the world, with tongue-in-cheek side glances at the humans endemic to the location. Common patterns develop, which Adams is careful to point out without belaboring the obvious. "Twig Technology" looks at Adams and Carwardine's first meeting, in Madagascar in 1985, searching for the aye-aye lemur. The aye-aye's long finger, adapted for digging insects out of bark, provides the title. They decide to team up on a larger project, which commences in 1988.

"Here Be Chickens" takes Adams and Carwardine through a maze of bureaucrats and tourists to a disappointing look at captive Komodo Dragon lizards on the island of the same name. Early explorers mark maps, "Here Be Dragons"; Adams substitutes chickens because their guide brings four live ones along for their lunch and a lizard runs off with one. "Leopard-Skin Pillbox Hat" takes Adams and Carwardine to Zaïre, where the bureaucracy is even thicker. The airport terminal is dominated by a portrait of the President insensitively wearing the hat commemorated in the title. In Zaïre they have close looks at gorillas and rhinos, both in protected government preserves.

"Heartbeats in the Night" takes Adams and Carwardine to New Zealand, seeking the kakapo, a parrot whose mating call once resounded in the valleys like heartbeats. Predators and odd mating patterns have left it nearly extinct, but they find one—on a preserve. "Blind Panic" takes them to China to examine the plight of the Yangzte River dolphin. "Rare, or Medium Rare?" takes them to Mauritius and Rodrigues islands to see the world's rarest fruit bat. An ornithologist shows them even rarer birds that he has brought back from the brink of extinction.

"Mark's Epilogue" allows the co-author to speak in his own voice, discussing the unknowns that determine whether endangered species survive for future generations to

see. Mark sees some progress being made, but increasing numbers is no guarantee against extinction. Finally, in "Sifting through the Embers," Adams paraphrases in his unique way the ancient Sybilline books in light of his travels with Carwardine.

Quotes

"That was the extraordinary thing. We actually did find the creature. We only caught a glimpse of it for a few seconds, slowly edging its way along a branch a couple of feet above our heads and looking down at us through the rain with a sort of serene incomprehension as to what kind of thing we might possibly be, but it was the kind of moment about which it is hard not to feel completely dizzy.
"Why?
Because, I realized later, I was a monkey looking at a lemur.
By flying from New York to Paris to Antananarivo by 747 jet, up to Diégo-Suarez in an old prop plane, driving to the port of Maroantsetra in an even older truck, crossing to Nosy Mangabé in a boat that was so old and dilapidated it was almost indistinguishable from driftwood, and finally walking by night into the ancient rain forest, we were almost making a time journey back through all the stages of our experiments in twig technology to the environment from which we had originally ousted the lemurs. And here was one of the very last of them, looking at me with, as I say, serene incomprehension." Twig Technology, pg. 6.

"Sleeping in Labuan Bajo, however, is something of an endurance test.
Being woken at dawn by the cockerels is not in itself a problem. The problem arises when the cockerels get confused as to when dawn actually is. They suddenly explode into life, squawking and screaming at about one o'clock in the morning. At about one-thirty they eventually realise their mistake and shut up, just as the major dogfights of the evening are getting under way. These usually start with a few minor bouts between the more enthusiastic youngsters, and then the full chorus of heavyweights weighs in with a fine impression of what it would be like to fall into the pit of hell with the London Symphony Orchestra.
It is then quite an education to learn that two cats fighting can make easily as much noise as forty dogs. It is a pity to have to learn this at two-fifteen in the morning, but then the cats have a lot to complain about in Labuan Bajo. They all have their tails docked at birth, which is supposed to bring good luck, though presumably not to the cats.
Once the cats have concluded their reflections on this, the cockerels suddenly get the idea that it's dawn again and let rip. It isn't, of course. Dawn is still two hours away, and you still have the delivery-van horn-blowing competition to get through to the accompaniment of the major divorce proceedings that have suddenly erupted in the room next door.
At last things calm down and your eyelids begin to slide thankfully together in the blessed predawn hush, and then, about five minutes later, the cockerels finally get it right." Here Be Chickens, pg. 27

"A sharp yelp of joy told me that Carwardine had found some He dropped to his knees and started to fire off his Nikon at a small pile of gorilla dung.
'It's in the nest,' he explained once he had finished, 'which is very interesting, you see. The mountain gorillas, the ones that live here, actually defecate in their nests because

it's too cold to get up at night. The western lowland gorillas, on the other hand, don't. They live in a warmer climate, so getting up in the middle of the night is less of a problem. Also, the western lowland gorillas live on a diet of fruit, which is another incentive for not shitting in their nests.'
'I see,' I said." Leopard-Skin Pillbox Hat, pg. 73.

"Rhinoceroses declare their movements and their territory to other animals by stamping in their feces, and then leaving smell traces of themselves wherever they walk, which is the sort of note we would not appreciate being left.
When we smell something slightly unexpected, if we can't immediately make sense of it and it isn't particularly bothersome, we simply ignore it, and this is probably equivalent to the rhino's reaction to seeing us. It appeared not to make any particular decision about us, but merely to forget that it had a decision to make. The grass presented it with something infinitely richer and more interesting to its senses, and the animal returned to cropping it." Leopard-Skin Pillbox Hat, pgs. 99-100.

"We are skimming over the tops of glaciers. The sudden splurge of light blinds us for a moment, but when the light coalesces into solid shapes, they are like shapes from dreams. Great top-heavy towers resembling the deformed torsos of giants; huge sculpted caves and arches; and here and there the cracked and splayed remains of what looks like a number of Gothic cathedrals dropped from a considerable height: but all is snow and ice. It's as if the ghosts of Salvador Dalí and Henry Moore come here at night with the elements and play." Heartbeats in the Night, pg. 106.

"This is an extraordinary performance. He puffs out two enormous air sacs on either side of his chest, sinks his head down into them, and starts to make what he feels are sexy grunting noises. These noises gradually descend in pitch, resonate in his two air sacs, and reverberate through the night air, filling the valleys for miles around with the eerie sound of an immense heart beating in the night.
The booming noise is deep, very deep, just on the threshold of what you can actually hear and what you can feel. This means that it carries for very great distances, but that you cannot tell where it's coming from. If you're familiar with certain types of stereo setups, you'll know that you can get an additional speaker called a sub-woofer which carries only the bass frequencies and which you can, in theory, stick anywhere in the room, even behind the sofa. The principle is the same: you can't tell where the bass sound is coming from.
The female kakapo can't tell where the booming is coming from either, which is something of a shortcoming in a mating call. 'Come and get me!' 'Where are you?' 'Come and get me!' 'Where the hell are you?' 'Come and get me!' 'Oh, for heaven's sake.' 'Come and get me!' 'Go and stuff yourself,' is roughly how it would go in human terms." Heartbeats in the Night, pg. 115.

"Suddenly we were all in rumbustious bounding mode. With much shouting and

hallooing, we clambered and slithered our way hectically across the floor of the gully, hauled ourselves up the other side and down into the next gully on the far side of which, sitting on a mossy bank in front of a steep slope, was a most peculiar tableau.
It took me a moment or two to work out what it was that the scene so closely resembled, and when I realised, I stopped for a moment and then approached more circumspectly. It was like a Madonna and Child.
Arab was sitting cross-legged on the mossy bank, his long, wet, grizzled beard flowing into his lap. And cradled in his arms, nuzzling gently into his beard, was a large, fat, bedaggled green parrot. Standing by them in quiet attendance, looking at them intently with his head cocked to one side, was Boss, still tightly muzzled.
Duly hushed, we went up to them. Carwardine was making quiet groaning noises in the back of his throat.
The bird was very quiet and quite still. It didn't appear to be alarmed, but then neither did it appear to be particularly aware of what was happening. The gaze of its large, black, expressionless eye was fixed somewhere in the middle distance. It was holding, lightly but firmly in its bill, the forefinger of Arab's right hand, down which a trickle of blood was flowing, and this seemed to have a calming effect on the bird." Heartbeats in the Night, pg. 137.

"They had entered into licensing agreements. Local businesses had put money into the project, in return for which they were licensed to use the baiji symbol, which in turn made good publicity for the baiji dolphins.
So now there was not only Baiji Beer, there was also the Baiji Hotel, Baiji shoes, Baiji Cola, Baiji computerised weighing scales, Baiji toilet paper, Baiji phosphorus fertiliser, and Baiji Bentonite.
Bentonite was a new one for me, and I asked them what it was.
They explained that Bentonite was a mining product used in the production of toothpaste, iron and steel casting, and also as an additive for pig food. Baiji Bentonite was a very succesful product. Did we, as experts, think that this public relations was good?
We said it was absolutely astonishing, and congratulated them.
They were very gratified to know this, they said, from Western experts in such matters." Blind Panic, pgs. 174-175.

"'He actually thinks he's a human?' I asked.
'Oh yes. Well, if he thinks Carl's his mother, it more or less follows, doesn't it? They may not be brilliant, but they're logical. he's quite convinced he's a human. He completely ignores the other kestrels, hasn't got time for them, they're just a bunch of birds as far as he's concerned. But when Carl walks in here he goes completely berserk. it's a problem because, of course, you can't introduce an imprinted bird into the wild, it wouldn't know what the hell to do. wouldn't nest, wouldn't hunt, it would just expect to go to restaurants and stuff. Or at least it would expect to be fed. It wouldn't survive by itself.
" 'However, he does have a very important function in the aviary. You see, the young birds that we've hatched here don't come to sexual maturity at the same time, so when the females start getting sexy, the males are not ready to handle it. The females are

bigger and more belligerent and often beat the males up. So when that happens, we collect semen from Pink, and—'
'How do you do that?' asked Carwardine.
'In a hat.'
'I thought you said in a hat.'
'That's right. Carl puts on this special hat, which is a bit like a rather strange bowler hat with a rubber brim, Pink goes made with desire for Carl, flies down and fucks the hell out of his hat.'
'What?'
'He ejaculates into the brim. We collect the drop of semen and use it to inseminate a female.'
'Strange way to treat your mother.'
'He's a strange bird. But he does serve a useful purpose in spite of being psychologically twists.'" Rare, or Medium Rare? Pgs. 182-183.

"The bird was watching. it's hard to avoid saying that it was watching like a hawk. It was watching like a kestrel.
Richard swung his arm back. The kestrel's head followed his movement precisely. With a wide underarm swing, Richard lobbed the small mouse high up into the air. For a second or so, the kestrel just watched it, jittering its legs very slightly on the branch as it engaged in monumental feats of differential calculus. The mouse reached the top of its steep parabola, its tiny dead weight turning slowly in the air.
At last the kestrel dropped from its perch and swung out into the air as if on the end of a long pendulum, the precise length, pivital position, and swing speed of which the kestrel had calculated. The arc it described intersected sweetly with that of the falling mouse, the kestrel took the mouse cleanly into its talons, swept on up into another nearby tree, and bit its head off.
'He eats the head himself,' said Richard, 'and takes the rest of the mouse to the female in the nest.'" Rare, or Medium Rare? Pg. 193

"The giant tortoises were eaten to extinction because the early sailors regarded them much as we regard canned food. They just picked them off the beach and put them on their ships as ballast, and then, if they felt hungry, they'd go down to the hold, pull one up, kill it, and eat it.
But the alrge, gentle dove—the dodo—was just clubbed to death for the sport of it. And that is what Mauritius is most famous for: the extinction of the dodo." Rare, or Medium Rare? Pg. 202

"There's a story I heard when I was young that bothered me because I couldn't understand it. It was many years before I discovered it to be the story of the Sybilline books. By that time all the details of the story had rewritten themselves in my mind, but the essentials were still the same. After a year of exploring some of the endangered environments of the world, I think I finally understand it.
It concerns an ancient city—it doesn't matter where it was or what it was called. It was a

thriving, prosperous city set in the middle of a large plain. One summer, while the people of the city were busy thriving and prospering away, a strange old beggar woman arrived at the gates carrying twelve large books, which she offered to sell to them. She said that the books contained all the knowledge and all the wisdom of the world, and that she would let the city have all twelve of them in return for a single sack of gold.
The people of the city thought this was a very funny idea. They said she obviously had no conception of the value of gold and that probably the best thing was for her to go away.
This she agreed to do, but first she said she was going to destroy half of the books in front of them. She built a small bonfire, burnt six of the books of all knowledge and all wisdom in the sight of the people of the city, and then went on her way." Sifting through the Embers, pgs. 213-214.

Topics for Discussion

How do tourists affect Douglas Adams' views on nature? Why must governments accept tourism in protected areas?

How are discotheques used as metaphors for the confusions that humans bring into the worlds of animals?

How did Europeans during the years of exploration affect the islands of the Indian and Pacific oceans? What steps are being taken to reclaim the native ecologies?

Which part of the adventure do you think most affects Douglas Adams and why? Which part most affects you and why?

Describe Douglas Adams' thoughts on anthropomorphizing animals. Does it help you appreciate his descriptions of various animals' behavior or detract?

What makes the dodo's extinction stand out as tragic among the millions of species lost on earth over millennia?

The authors include "One More Chance...," a list of organizations to which readers can contribute. Which one(s) has this book moved you to consider supporting? Discuss such factors as the probability of success. If you would consider none, what about the book leaves you disinclined?