

The lady Crusoe of Australia's tropical islands

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*Alone on a coral strand—that's the life
for Julie Booth, onetime skin-diving
champion turned self-taught naturalist*

"And lifting up mine eyes, I found myself
Alone, and in a land of sand and thorns."

Alfred Lord Tennyson

There she stands, windswept, her blond hair brittle from the water, her toes shriveled from the wetness, yet fashionably attired in shocking pink hot pants. She stands on a sandy beach—but one without umbrellas, beach balls or youngsters building sand castles. Rather, it is a minuscule coral reef off the Australian coast, and she is Julie Booth—naturalist, photographer, artist, fashion designer, champion skin diver and president and sole member of the women's lib chapter of Wreck Island. There she stands, alone.

Long divorced, this Sydney native visited Lord Howe Island to take part in television documentaries. That was her first taste of a coral reef and in her words, "I was hooked." Since then she has been living on a series of Australian islands—Lord Howe, Heron, One Tree, Fairfax, Hook and now Wreck. She tolerates periodic visits from the mainlanders who bring her water, mail and other essentials. Few others are successful in visiting her, although Malcolm Kirk, a freelance photographer and his wife spent several hours on the island last July. "In a way," Mr. Kirk says, "she

*Julie's letters were selected and are introduced
by Michael J. Bandler, frequent contributor
to SMITHSONIAN. Color photographs are by Malcolm
Kirk of New York, one of Julie's few visitors.*

is rather feminine, although she has been hardened by her life in solitude. She is quite aware of her femininity, and even saves fresh water for her hair." According to her brother, Dr. Norman Vincent of Weston, Connecticut, Julie had an illustrious visitor one day last fall when Canadian Prime Minister Pierre Elliott Trudeau joined her for some scuba diving.

Julie studies birds, reptiles, coral, storms—anything falling within her purview—with final evaluation of all her projects yet to come. The scrubby island that she currently calls home, half a mile by a quarter of a mile, is inhabited by white-breasted sea eagles, white and gray herons, rats (introduced by an Australian oil company) and green and brown turtles. There are three types of trees and plants—*Tournefortia*, *Pandanus*, *Casuarina* and *Pisonia*—and, of course, myriad clumps of coral.

Julie either dines alfresco in a grove near the two huts that represent home and office, or snatches a bite when hungry. The island is relatively flat; its highest point is about 20 feet above sea level. There are no flowers on the ground, but blossoms appear on trees from time to time. Rainfall is very, very light—except during cyclones. A kerosene lamp provides the only light, but it isn't important. Julie, who is up before dawn, retires early.

Dr. I. E. Wallen, director of the Smithsonian Institution's Office of Environmental Sciences, and Julie's chief correspondent, reports that with equipment from

Snapshot shows Julie when she first started island life. Today (opposite) she's on Wreck Island.



the Smithsonian and funds from the Vetlesen Foundation, she has engaged in studies that have produced a number of discoveries from the investigation of mating habits of giant turtles to the effect of tropical cyclones on coral.

Throughout her stay on the reefs, the self-taught researcher has corresponded regularly with her sponsors on several continents. Letters written during the last five years, in particular, have followed her experiences on the Reef, from violent storms to thwarted advances by sex-starved turtles and goats. No one can tell it better than Julie herself, and so, herewith, follow letters from coral islands, written chiefly to Dr. Wallen and to Edwards Park of SMITHSONIAN:

January 17, 1966—Heron Island

... For the past eight months, I have been fighting my way through a mountain of red tape in an effort to obtain permission to spend one year on an uninhabited island, working on boobies and marine fauna. At last all my permits have arrived and my departure for Fairfax Island is on January 30, so I am excited.

Fairfax Island is a coral cay, about 40 miles south-east of Heron Island and is situated in the Bunker Group at the southern tip of the Great Barrier Reef. It is the only island for many hundreds of miles which has nesting boobies, and the only accessible place where one could stay for a prolonged period. Apart from studying the behavior of boobies and taking underwater shots, I have no definite project in mind.

March 29, 1966—Fairfax Island

... I have 1,000 brown booby bands here with me and have only banded about 100 juveniles and nestlings so far, for the simple reason that this species is extremely timid and easily disturbed. I cannot have the birds regurgitating or fracturing wings, in an attempt to flee whenever I walk through the island, so naturally I have to take it carefully.

Special permission was granted to enable me to live on Fairfax and to occupy the hut which belongs to the Royal Australian Navy, but for which they have little further use. I have to charter a boat at monthly (instead of fortnightly) intervals to bring supplies. Also all my fresh water has to be brought with supplies from the mainland.

I am currently poison-baiting the rats here which are so bad that they keep me disturbed from my sleep every night. I have been bitten three times. They are also eating eggs and fledglings of the boobies, baby turtles (*Chelonia mydas*) as soon as they hatch.

June 29, 1966

... Your telegrams came through gales from one fishing boat to another and were finally handed to me in a peanut-butter jar, scrawled on a piece of paper and barely legible.

... Have some good shots of the goats here and will forward these as soon as they are printed. My knowledge of domestic goats is nil, but I am rapidly learning about the behavior of feral goats. Was lying on the ground trying for some good angle shots when suddenly one of the goats jumped on me and tried to copulate with me. If you think that this is interesting, I might add that this particular goat was a mere three weeks old! Needless to say I took a good long look at myself in the mirror later.

Missed a wonderful opportunity to tape an extraordinary sound from a pied oyster catcher. There were four birds and one could feel the tension in the air around them. I decided to sit this out and witnessed a most spectacular display by one bird. ...

Idea for a shark repellent

September 5, 1966

... Can you tell me if your Navy has a very effective shark repellent? To date, my chemical, extracted from a holothurian, made the eyes of fishes opaque and had small reef sharks running themselves aground when it was introduced into a pool at low tide. I am an extremely curious female and I just had to find out why one species of holothurian would remain in the open on a bare sandy bottom, whilst others buried in the sand or hid under coral, emerging only at night. In the process, I found that the exposed animal had something which the others lacked—namely, the ability to foam. This foaming substance tasted so bitter and also burnt my throat (I smell and taste everything) so I tried it as a tick repellent and found the ticks were not happy with this at all. I have not continued its use because I don't know whether it would have any harmful effects to my skin.

My idea is to buy a kid's plastic wading pool and catch small sharks. I could add a dye to my extract,



A broad stretch of coral reef surrounds tiny Heron Island, where Julie once lived.

Photographer Kirk conducts a taped interview with Julie at her "dining-room" table.



opaque the shark's eyes with some kind of covering and test the effects in the pool of varying concentrations. I have a quantity of MS222 to anesthetize the sharks if necessary.

The greatest and most effective test would be to apply the solution to baby turtles during the hatching season. I have never seen so many sharks at one time as there are during this period. They come in dozens at dusk and almost leap out of the water fighting each other to get at the hatchlings as they enter the water. I thought I would trick the sharks by collecting the hatchlings and releasing them in the lagoon, just as I returned from skin diving. I hadn't noticed any sharks there but, within seconds of releasing the turtles, sharks came from everywhere and I was obliged to leave the water to avoid snapping jaws!

October 28, 1966 (Letter to Julie Booth)

On behalf of the United States National Museum, Smithsonian Institution, I wish to acknowledge your gift of one Sea Snake, which is being accessioned into the U.S. National Collection of Reptiles and Amphibians in your name.

I have identified your specimen as *Hydrophis major*, and, as such, it represents the first and only specimen of this species in the U.S. National Collection. . . .

Sincerely, James A. Peters, Curator, Division of Reptiles and Amphibians

January 5, 1967

The seabirds warned me early this morning by their behavior that the weather would change and it would blow hard. I thought they must be wrong as it was a perfect day—until late afternoon. Black clouds sped across the sky, a few light showers until 8 p.m., then the elements went wild. It is now 9:45 p.m. and the hut is flooded out. Lightning has been flashing continuously every couple of seconds for more than two hours. The rain is heavier than I have known here,

with occasional spots of large hail. At one stage I thought the front wall of the hut would blow in from the sudden strong gusts which have already felled trees. Sula, my dog, tried to hide under the bed but the floor is one vast swimming pool. The furious storm is lashing out at everything and the sea on the reef is roaring like an express train. Those gusts seem to be trying to pick up the hut and hurl it away.

January 7, 1967

. . . The weather is still bad and more booby chicks have died. It is quite heartbreaking to see parents standing guard over lifeless chicks or to witness the bewildered look of the changeover parent, who is always given a hearty greeting by his offspring. I did attempt to remove some of the corpses and was attacked by the parents who normally tolerate me fairly well. Have been up since four this morning bailing out my dinghy, still in my nightdress, in the pouring rain, up to my waist in the sea.

Later went for a walk through the island and found many more dead birds. Removed a dying chick which was inert, and put a dead one in its place to see what would happen. As soon as the parent returned, it looked all around, then began to attack the dead bird, thrusting it forward away from the nest site. The ailing chick made a complete recovery after careful nursing and was accepted when returned.

April 18, 1967

. . . I am down to my last few gallons of fresh water; canned food is adequate but monotonous. I feel I should make plans for leaving as the devastation has reduced the boobies to one-third of the population, but after seven cyclones I can live through anything!



Julie lived in this corrugated-iron hut until a cyclone blew it down. Another has been built for her.

Am hoping that present weather will not build into another cyclone as it will coincide with high tide and Fairfax Island will again be underwater!

September 4, 1967

... The experience of being frequently cut off here, at times low in food, and once with neither food nor water, has taught me a lot. I know it would not be possible for me to starve to death and am sure I'd manage on very little water. I may have to live on an inhabited island, so long as it's possible for me to be left undisturbed. Perhaps I sound antisocial. It's just that being alone I don't have to worry about finding food or water for anyone else. . . .

October 4, 1967

... For the last five days I've been painting numbers and measuring mating pairs of *Chelonia mydas*. By this means it is possible for me to follow the marked individuals underwater to observe their behavior, and I've come up with some very interesting aspects. This is all so exciting when one realizes that no measurements of mating males have been taken and very little known of courtship and mating behavior. I plunged in prepared to follow the turtles around the lagoon all day if necessary. . . .

October 19, 1967

... This island is crawling with cockroaches, but I prefer to tolerate such loathsome creatures rather than use pesticides which would kill my friends the spiders. I read somewhere that spiders were being fed LSD, and this resulted in odd-shaped webs being spun. Directly after the worst cyclone here, the spiders did exactly the same thing, and as far as I am aware, they were not under narcotic influence.



She is hard at work on a book about her life as a recluse and her scientific findings.

To return to the green turtles. I discovered one morning, when the wind and tide were in the right direction, that mating pairs were being washed ashore. This gave me the opportunity of painting numbers on their backs and measuring the carapace of at least the males. As soon as they went back into the sea after mating, I followed the marked females around for hours on end, which provided me with much useful information on mating and post-mating behavior. Unfortunately, the wind changed again next day, and I was forced to devise a new blend of paint which could be applied in the water. After much experimentation, I had licked this and again resumed behavior studies. The paint does not last for more than a few days in most cases so has to be renewed, but it has been worth all the trouble—even getting to look like a prune after so much immersion in seawater. One interesting fact is that females have a particular stretch of the lagoon which is purely for them. There they can lie on the sandy bottom and any males swimming overhead will not molest them. However, in any other area they are vulnerable. Also, the females have a special sign which is a definite “no” to ardent males. I tried the same signal on males who approached me with ardent eyes and intentions, and it worked! I had females thinking I was a suitor, and males hoping I was available! One has to learn to be pretty slick with turtles. . . .

May 1, 1968

... For the past year, I have been working daily on *Acanthaster planci* [see SMITHSONIAN, crown-of-thorns article, April 1970] behavior and constantly observing coral growth and regrowth (post cyclone) which has proved phenomenal. To prove my measurements are accurate, I have been going without food to buy film so that the same corals may be filmed at regular intervals. At present the Australian government is interested in my work here and has called for more information in order to provide more practical help.

Recording seabirds for deprived generations

Have lots of recordings of birds which will be coordinated to transparencies. This will cover almost every aspect of behavior of nesting seabirds at Fairfax, and at the rate of present human destruction of the Great Barrier Reef, I doubt that the next generation will ever hear a seabird call.

June 26, 1968

... Many people question my judgment in staying at Fairfax, but to my way of thinking one must have faith. If it is God's will that I live, I shall do so despite the conditions and risks; if not, there's nothing I can do about it.

Perhaps it's selfish of me to “tune out” to all the upheaval in the world—don't even know what our

Prime Minister looks like, but I am aware of the rest of the world via radio. . . .

June 24, 1968

. . . Since the cyclones, there has been a remarkable, even phenomenal coral regrowth. I am not concerned with corals on the reef flat which anyone could study at low tide, but the fact that cyclones completely devastated whole areas here has provided me with a unique opportunity.

I am currently watching specific corals which in the pre-cyclone period were alive and healthy. After the cyclones these specific corals lay dead for months, then became covered with corallines or algae for months and then have begun to grow again. . . .

October 28, 1968—Hook Island

. . . Hook Island is right in the midst of the most popular group of Barrier Reef tourist islands. It is eight miles by four miles, and a mainland type of island with a vast bird and reptile population. The island is very rugged and living conditions are very primitive at present with six families and a floating population composed of various types of construction workers who are currently working on the underwater observatory. Despite the hair-raising experiences on Fairfax Island, I would dearly love to be back there.

June 9, 1969—Fairfax Island

. . . From January or February next year I will very likely have my son, who will be 18 then, with me. He hopes to spend a year with me since it will be the last on Fairfax Island as no further permits will be issued after December 1970. Carl has won two amateur photography contests without any help from me, and intends to make 16-mm movie and still films at Fairfax.

June 12, 1969

. . . You have no idea of the havoc on Fairfax in the few months that I was away. All of the nesting sea eagles, which I was studying, have been shot by fisher-

men in the last few months, and many of the other birds. What with mining activities on the Reef and predation by man, there will be little left for future biologists. The tendency to make stronger pesticides crops up in all of the country breakfast-session programs on radio. I often switch off when I hear of birds dying after attacking insects on crops. Aerial baiting of dingoes with poisoned meat makes me shudder. . . .

October 5, 1969

. . . From June till September there was a tick plague, and I spent half an hour up (and 15 minutes in bed) every night, all night, collecting hundreds of ticks off the walls, floor and my bed, averaging 200 adult ticks per night. As the boobies began laying, the ticks decreased inside the hut—no doubt there will be many birds dying as a result.

November 18, 1969 (from a tape)

. . . What are the things I miss out here? Firstly, my hairdryer, because I hate to have wet hair all night in the winter, and I do stay in the water so long that it is invariably wet all night. And secondly, browsing through bookshops, especially looking for paperbacks about animals and animal behavior.

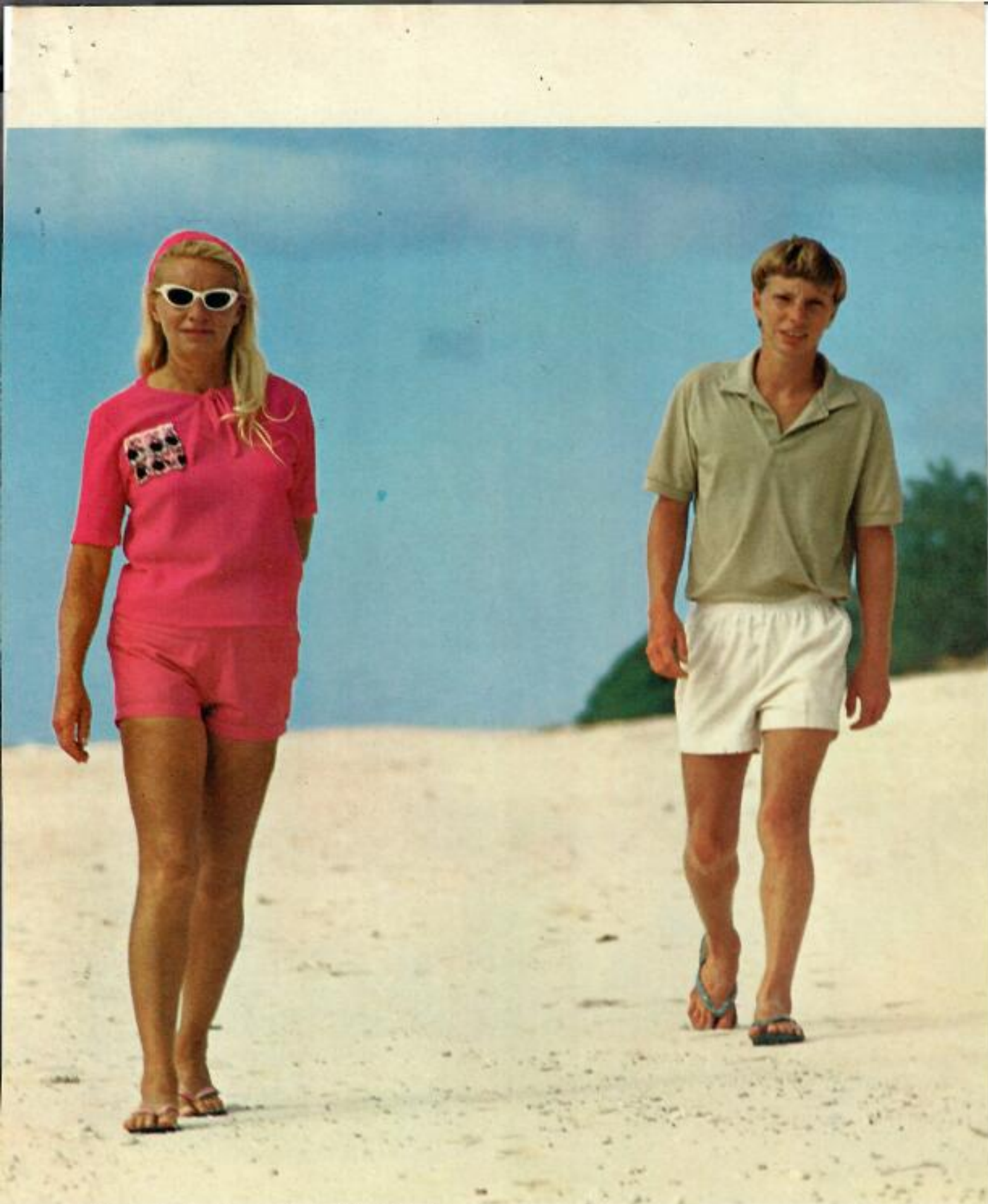
I love to go down to the lagoon at dawn on calm days. On windy, rough days, there are lots of little stingers in the water which make life uncomfortable. But I go down every morning whenever possible and take a plunge, have a bath in the lagoon. Alongside of me are reef herons and piebald oyster catchers, little piebald cormorants and sooty oyster catchers with a great big red ring around their eyes and a red bill, lots of shore birds, silver gulls, all lined up, and they're all taking a bath too.

"I couldn't live without perfume"

I love to do a man's work if I am physically capable, but I could shed tears from sheer frustration trying to do some of the tasks that are required living alone. I like to make all my furniture. I have made all my furniture for the hut out of driftwood. But at the same time, if I had a dollar to my name and was hungry, I would spend it on a bottle of perfume rather than a meal, because I could live without a meal but I couldn't live without perfume. I like to smell sweet and clean. . . .

December 8, 1969

. . . The Lands Minister has now decided to give me a ten-year lease on the whole area of Wreck Island instead of a small part. [Julie has been living there since early 1970.] My idea is to have two separate huts, one for sleeping and paper work and the other for kitchen and lab so any visitors can use it also. Of course, by visitors I mean your staff and Australian Museum staff. I have the right to keep anyone else off.



Julie now has her 19-year-old son at Wreck Island. He hopes for a career in wildlife photography.

