

On My Mind

5/30/03

A thick book I've just finished reading makes the interesting argument that insofar as survival of the natural world (that is, animals, reptiles, birds, insects, plants, trees) is concerned, all of the things that make island life precarious (that is, at risk) also make life on the continents precarious, and that, in fact, the world can be viewed as a collection of islands - all of which are in trouble.

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Though many islands in the world, according to the book "Song of the Dodo" by David Quammen, have unique inhabitants - think of the huge land turtles in the Galapagos that exist nowhere else - the factors that affect island wildlife - and the ability of island wildlife to survive - are the same on all of them. The number of species found on an island, the number of those which are unique, the number of individuals within any given species, and the risk of their extinction are all affected by the same things.

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What kind of wildlife is found on an island - and its ability to survive - depends upon such things as the particular species' ability to move - or be moved - from place to place (Quammen says that bats, rats and mice, for example, can be found on almost every island - the bats fly in, mice and rats float in on natural flotsam; elephants have been known to swim from island to island); on the amount of food available and the presence or absence of natural predators (leading to dwarf deer in one instance, to Komodo dragons in another); what Quammen calls their "ecological naivete" (again, the Galapagos turtles, unafraid of humans, and the now-extinct dodo bird, so unafraid it was easy prey for hunters); on island remoteness, island size, and the passage of time, among other things.

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Large islands, Quammen says, have more kinds of wildlife, and more individuals within each kind, than do smaller islands. Yet even large islands have a smaller variety of wildlife than do the mainlands near them. Madagascar, near Africa, has no native antelopes. New Zealand, near Australia, has no native marsupials or eucalyptus trees. Hawaii has no native oak, maple, willow or elm trees. Islands generally have few native frogs, snakes, or large-bodied mammals. (Guam, of course, being the exception!)

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But wildlife on islands tends to become extinct, and wildlife on small islands more so than on large ones. Quammen uses birds as an example, saying that since birds have been more closely studied, more data is available for them than for other wildlife. Since 1600, 171 species and subspecies are known to have gone extinct. Of those, 155 species and subspecies lived and died on islands. Island birds, he says, face about fifty times as great a likelihood of extinction as mainland birds. And three-quarters of the insular extinctions occurred on small islands. The same holds true for other species.

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The smaller the population, explains Quammen, the more subject it is to disasters - natural disasters such as typhoons, earthquakes, drought, lightning-set forest fires - or man-made disasters such as hunting, trapping, habitat destruction, the introduction of non-native wildlife, and spraying of pesticides. If only a few survive a disaster, subsequent inbreeding will weaken the

species. And on a small island, there isn't anywhere else to go to avoid the disaster. If there are not enough females, or the surviving females are too old to bear young, the species will die out.

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One might think that the extinction of wildlife on small islands doesn't really matter - there are plenty of other species of wildlife on the larger islands and on the continents. But while this may have been true a century or two ago, it is true no longer. There are not all that many vast undisturbed areas on earth anymore. The search for oil, for lumber, for minerals, the commercialization of wildlife refuges and tropical island resorts, unrestricted hunting, and the like, have cut into even the most remote areas of the world, destroying habitat, bringing in non-native plants and animals, reducing the wildlife population throughout the world.

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The untouched areas of the world are getting fewer, and smaller. They have become islands of a sort, subject to the same hazards as islands surrounded by water. Pockets of natural parks and preserves are surrounded by inhospitable terrain that prevents wildlife from migrating elsewhere, and prevents new species from immigrating. Many are not large enough to sustain the wildlife therein over time. They are prey to the same man-made and natural hazards - and their consequences - as are populations on islands.

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Some extinction is normal. Varieties of wildlife have gone extinct over time - "perhaps a few species per million years for most organisms." Quammen calls this normal "background noise." There have also been cataclysmic extinctions, such as the one in which the dinosaurs disappeared. Quammen cites scientists as saying that the present rate of extinction, however, is roughly <I>one hundred</I> times the background noise, and in rainforests, <I>a thousand</I>times normal extinction rates. (emphasis added)

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To quote Quammen, "The problem of habitat fragmentation, and of the animal and plant populations left marooned within the various fragments under circumstances that are untenable for the long term, has begun showing up all over the land surface of the planet...The problem is more ubiquitous than carbon monoxide. It exists wherever *Homo sapiens* has colonized and partitioned a landscape. Although it is an old trend, it has recently become acute. Critical thresholds are being reached."

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Says Quammen, "As we extinguish a large portion of the planet's biological diversity, we will lose also a large portion of our world's beauty, complexity, intellectual interest, spiritual depth and ecological health." Sterilizing our own biosphere, he says, represents a form of suicide.

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He offers as comfort: there are no hopeless cases, only people without hope and expensive cases.

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Quammen's book makes for fascinating reading not only because it explains such things as why islands have or do not have certain plants, animals, birds, insects, but also because the book includes accounts of trips he himself makes to some of the remote islands (Aru, in the Moluccas,

for cenderawasih, a rare species of bird of paradise; Montes Claros, in Brazil - a continental island, to see muriquis - a threatened primate species; Madagascar to look for golden bamboo lemurs, Mauritius to look for kestrels - and to Guam, for its snakes!) which he offers as examples of island oddities and island characteristics.

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In the telling, Quammen describes the research, field tests and conclusions of the many scientists whose ideas have led to the present concept of island biogeography. The book is long, with any number of new scientific words, but it is highly readable, and most informative.

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The book also offers "design principles" for establishing nature reserves: large reserves hold more wildlife in balance than small ones; reserves located close to other reserves can hold more wildlife than a remote reserve; groups of reserves tenuously connected will support more wildlife than groups that are not; round reserves will hold more wildlife than long narrow ones; and different wildlife species require different minimum areas to support enduring populations.

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What the book does not touch on, but seems valid, is that the same concerns apply to our marine resources, to coral reef communities, to the extinction of marine species, to the ideal size of natural marine preserves.

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The book is listed in the catalog at the JoeTen-Kiyu library, but was neither on the shelf nor checked out when I looked for it yesterday.

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On another subject entirely, belatedly, let me add my encomium to the many already offered to Consul General Julie Heidemann of the Republic of the Philippines. She has played a significant role in easing the plight of its overseas workers in the CNMI, in finding ways to improve their lives, and protect their interests. And she has done so while maintaining the most cordial relationship with the "host country." That's a remarkable diplomatic achievement. Her successor has a lot to live up to!

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It seems almost a travesty to mention, in the same column, something as imbecilic as the reaction of Senate Floor Leader Joaquin G. Adriano to the more than fifty bills passed by the House in its recent marathon session. His categorical rejection of all of them, without any qualification whatsoever, is about as obstructive, provincial, petty, short-sighted, mindless - and a few dozen other epithets - as one can get.