

SHOVELING FUEL FOR A RUNAWAY TRAIN.

BRIAN CZECH. 2000. University of California Press, Berkeley. 210 pp. Hard cover \$ 34.95 ISBN 0-520-22508-2. Available from the Nature Saskatchewan Bookshop.

This is an interesting and certainly topical book. The runaway train is a metaphor for continued economic growth that will lead to ecological disaster. The book begins with the Prologue, followed by Part One (The Runaway Train) and Part Two (Stopping the Train) with five chapters each, and ends with Conclusions. There is also a bibliography and an index, each 13 pages. The intent of the book is to alert readers to the fallacy of today's economic theory which advocates an annually increasing gross national product as a desirable goal, and to suggest ways to stop this fateful growth.

Brian Czech is a conservation biologist with the U.S. Fish and Wildlife Service, Division of Refuges. In the **Prologue**, he describes his encounter with the American mega-economy such as the proliferation of highways, clear-cut logging, wasteful fishing in the Bering Sea and the decrease of wilderness.

Using quotes, references and statistics, Brian Czech shows very clearly in **Part One** how the American public, its government and academia glorify economic growth. Sixty-three percent of Americans are convinced that there are no limits to growth. This view is very persistent despite evidence to the contrary. For instance, even though most oceanic fisheries were already in decline, Julian Simon, professor of

business administration at the University of Maryland proclaimed "the infinitude of natural resources" in his book "Ultimate Resource 2" published in 1996. It is believed that resources may be substituted, such as solar energy for fossil fuels, capital for labor, and that human intelligence (education and knowledge) can increase indefinitely. Czech shows that laws of physics set limits to economic growth. For example, the more solar energy is captured and used, the more heat is produced on earth. In the U.S., 40% more fossil energy is used than the total amount of solar energy captured by vegetation.

Just as it was very difficult to overcome Ptolemy's view of the world, so it takes a revolution in economic theory to incorporate limits to economic growth into our prevailing economic theory of limitless growth. Only when evidence piles up that economic growth without limits leads to disaster will ecological economic theories be developed and accepted.

Czech recognizes that people are a biological species. Growth of our human population and consumption of resources follows that of an "r" selected species, which is a term from ecology for a species whose growth is rapid, passes beyond the carrying capacity and then crashes. For an 'r' selected species, growth is regulated by mortality.

However, in Czech's view, overpopulation is only one of the factors leading to deterioration of the environment. Affluence (or per capita consumption), technological damage (such as pollution) and human population equally have an impact on the environment. The inadequacy of gross national product as an indicator of economic performance is discussed. It should be replaced by an index of sustainable economic welfare which takes into account our natural capital and ecological services (i.e. pollination), valued at \$33 trillion. Part One ends with a whirlwind tour of ecological economics in chapter 5, and Czech provides several references for those interested in a broader discussion.

In **Part Two - Stopping the Train** - the author discusses ways to stop the runaway train through the creation of a steady state economy. He begins by dividing the human population into three classes: the 1% of the population that is super-rich, the "liquidators"; the 80% that are poor or in the middle class, the "steady state class" or the "steady staters"; and the remaining 19%, termed "amorphic class", who are intermediate in consumption expenditures.

The characteristics of the liquidators and their lavish spending habits are discussed at length. Czech feels that members of this class should be forced by public opinion to moderate their spending. Ignorant liquidators should be educated and those who know what they are doing should be despised. The relatively modest spending habits of the steady staters, their homes and cars, are acceptable.

Czech suggests that men and women should not choose the big spenders as mates, but rather steady staters. Although the display of wealth is deeply rooted in the animal kingdom, for

example in the growth of huge antlers and gorgeous tail feathers, Czech believes that if people realize that excessive liquidation leads to collapse, they might be able to modify their behavior to one that doesn't threaten mankind's survival. For example, the intelligent woman might reject a liquidator as a suitor because he jeopardizes the grandchildren's well-being. Czech follows the theory that socio-economic evolution can be Lamarckian, in that attitudes and institutions are capable of change, and are "passed onto or initiated by successive generations", especially if the socio-economic conditions creating the need for adaptation remain.

Czech predicts that in a steady state economy, pure saving banks would arise that would accept the surplus money of the liquidators and steady staters, as non-investing, no interest bearing savings. Also, liquidators would dispose of their surplus funds by donating to charities.

Whereas Part One leaves the reader convinced that popular economic theory and practice of continued economic growth will lead to a disastrous future for our grandchildren, Part Two is less convincing and practical. I find some of the solutions to stop the bloating of our economy, such as saving surplus funds in no interest bearing investments and the choosing of ecologically minded mates, somewhat utopian. The huge total consumption of the large class of steady staters, in the form of personal transportation, proliferation of suburbs and mass tourism, is little discussed. The consequences of improved living standards in underdeveloped countries on pollution and depletion of resources are not mentioned. Czech believes that a steady state economy can be achieved in a democratic, free-market society, but there is only a brief

discussion of the consequences of reduced consumer spending, such as economic depression and mass unemployment.

The strength of Czech's book lies in the excellent exposition in Part One - the Runaway Train - that continued economic growth leads to disaster and that we must incorporate into our economic theory the fact that natural

resources are finite. If Part Two - Stopping the Train - is less convincing, then this perhaps demonstrates the difficulty in providing effective solutions. The author presents interesting insights into what is perhaps mankind's biggest challenge, and the book is well worth reading.

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SASKATCHEWAN SCENIC SECRETS

ROBIN AND ARLENE KARPAN. 2001. Parkland Publishing, Saskatoon, SK. 120 pp. Hard cover \$34.95 Can. ISBN 0-88864-298-9. Available from the Nature Saskatchewan Bookshop.

Some of the Karpans' scenic secrets will be familiar to members of Nature Saskatchewan. Probably, however, no one will have visited them all nor have come back with such a superb collection of photographs.

The book is an account of the authors' travels through the province and a collection of photographs taken over a number of years. It takes us through the eleven ecoregions from the south to the north, from parks to little known areas accessible only to those prepared to get off the beaten track. It is not a travel guide but there is a map showing the location of the places mentioned and a list of addresses which facilitate getting to the more remote sites.

The Karpans take us from the rolling prairie in Grasslands National Park to the dense stands of tall trees in the boreal forest; from the unusual landforms at Big Muddy near Bengough to the lush, secluded sanctuary of the

Rendek Elm Forest; from the Great Sandhills, Douglas Dunes and Good Spirit Dunes in the south to the huge desert-like Athabasca Sand Dunes in the north; from hoodoos near Estevan to the sand pillars south of La Ronge; from the wide valleys of prairie rivers to the deep canyons and magnificent waterfalls on the Churchill and Grease rivers; from rich prairie lakes and wetlands of international significance to clear northern lakes, such as the Gem Lakes where "...if you walk the trails when the water is calm, the air is clear and the sunlight just right, these tiny lakes truly glisten like gemstones".

The book is a great presentation of the natural beauty of the province. All 135 photographs are excellent, well reproduced and well formatted. The Karpans must have spent hours or even days, waiting for appropriate light conditions for some of the photographs. Interspersed among the landscape pictures are photographs of

animals that depend on the habitats depicted. We also like the occasional inclusion of people and their red canoe to spark additional interest.

The text includes pertinent information on the flora, fauna, history and geology of the various sites, as well as picturesque anecdotes about the authors' travels. For example, on their visit to the Rendek Elm forest : "To photograph the ferns, we had to wait for calm, cloudy conditions so that the ferns would stay still and the light under the forest canopy would be evenly diffused. Early one July evening when the elements cooperated, we descended the ridge into the enchanted forest below. It was like entering another world. The stillness, heat and humidity weighted heavily with every step and a sweet pungent odor permeated the air. The sensation was immediately familiar; it felt exactly like being in a tropical rainforest." (p. 69)

The Karpans have admirably achieved their goal of showing us the natural beauty and the diversity of

Saskatchewan's as yet unspoiled landscapes. With so much of the natural landscape already disrupted by agriculture, forestry and mining, they hope to raise awareness of the need to conserve what we still have and ... "that governments will not only look at what land does for the economy, but also what the beauty of nature does for our souls" (p.9).

We recommend this well-written book for the fascinating information about the secret places; for the sheer beauty of the photographs; for its non-abrasive message about the importance of habitat protection for the survival of endangered species; and as a stimulus for the reader to get out and see more of the wonders of our province. It would also be a great gift to show outsiders that there is much more to Saskatchewan than wheat fields and grain elevators.

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THE SAND DUNES OF LAKE ATHABASCA: YOUR ADVENTURE IN LEARNING

PETER M. JONKER and J. STAN ROWE. 2001. University Extension Press, Saskatoon. 194 pp., illus., 8.5 x 11 inches. Soft cover, \$34.95 Can. ISBN 0-88880-421-0. Available from the Nature Saskatchewan Bookshop.

The product of many visits to the Athabasca dunes and years of research by two distinguished scientists, *The*

Sand Dunes of Lake Athabasca is designed for readers who want to learn about the geological and human history

of the dunes, the flora and fauna of the region, and the ecological significance of this unique area. It is at once a text book, a field guide, and a travel book — a must for anyone planning to visit the dunes, a marvelous source book for those who have already experienced the grandeur of this pristine wilderness.

Both authors are eminently qualified to write this book. Peter Jonker is currently Director of Environment, Science and Technology programs with the Extension Division, University of Saskatchewan. An ardent naturalist and a devoted ecologist, Peter has conducted annual expeditions to the Lake Athabasca sand dunes since 1991. J. Stan Rowe served 19 years with the Canadian Forestry Service before coming to the University of Saskatchewan where he taught northern wildland ecology for 18 years. An acknowledged authority on the Lake Athabasca sand dunes, Stan has visited them frequently and was instrumental in leading the battle to preserve them as a wilderness park.

The approach and tone of the text is summarized in the following paragraphs from the Foreword:

“This book tries to capture the story of Lake Athabasca sand dunes: a landscape first invented by ancient movements of Earth’s crustal plates, by climate, by ice, by water and wind erosion. These, over vast time, shaped relationships between soil organisms and plants, insects and birds, mammals and amphibian species. Throughout the text we try to throw a little light on the questions: Where and what is it? By what process did it come to be?

“We sincerely hope that by discovering the deeper beauty of this and other wild places you will also discover within yourself a willingness to

set limits on the inclination to manage and change all parts of the other-than-human Earth. Wisdom suggests that what most needs changing is not the nature matrix (matrix means “mother”) in which our culture is set, but culture itself as the carrier of many misplaced ideas and values concerning nature. The task goes beyond simple individual change.”

The book is organized into ten chapters, followed by a valuable bibliography, checklists of plants and animals by common and scientific names, and a subject index. Each chapter is illustrated with supportive photographs, maps, and diagrams. As a sort of diversion for the reader, the authors have added what they call “insets,” little boxes with a buff-colored background, packed with Indian legends, poems (some of the best are Peter’s own), incidents, quotes, and scientific elaborations. One could go through the book a second time just to read the insets.

The Introduction and Chapter 1 deal with the geographic location of the dune fields and how dunes are formed. Chapter 2, “Landscapes for the Visitor,” provides a comprehensive overview of the landforms and vegetation of the entire area. The authors divide the region into three landscape groupings, comprising nine ecosystems. Under Sparsely Vegetated Landscapes, the reader is introduced to strands and shorelines; active sand dunes; sand sheets and fringe ridges; and gravel pavements (always of particular interest to the visitor). In the second section, Landscapes of Vegetated Uplands, beaches and landscapes away from the lake are treated. In the final section, Landscapes of Vegetated Lowlands, the writers have included lakes and groundwater; rivers and valleys; and organic terrain (fens and bogs). Chapter

3 deals with the nine endemic species of plants found nowhere else in the world and a number of other distinctive plant species. Chapters 4-6 deal at some length with the mammals, birds, amphibians, insects and fish of the area. Chapter 7, a well-written chapter which might have come earlier, provides a fascinating geological history of the dune region. Chapter 8 deals with the human history of the area, going back 12000 years, to shortly after the Laurentide ice sheet melted northward. Chapter 9 deals with the historical push for the protection of the dunes, culminating in the creation of Athabasca Sand Dunes Wilderness Park in Saskatchewan in 1992 and the Maybelle River and Richardson River Dunes Wildland Provincial Parks in Alberta in 1998. The final chapter, after telling how to reach the parks, ends appropriately with a discussion of a wilderness ethic and zero-impact camping.

The farther one gets into the book, the more one appreciates its breadth and depth. Whether you want to know how much snow falls on the dunes, which birds breed in the region, or how to distinguish among mammal tracks in the sand, the answers are there. Its particular strengths include its treatment of geological history, dune formation and endemic plants.

In a second edition, some minor changes should be considered. Even

though most of the difficult terms are explained immediately after their first use, a glossary at the end would have been a useful addition (more valuable, probably, than the list of figures that is provided). A large, clear map of the entire region, indicating all place names, lakes, rivers, and major dune areas (perhaps as an end-piece) should have been included. While the diagrams are uniformly clear and well drawn, a few of the maps are inadequate, the quality of blue in the rivers hard to see. Since a visitor to the area is reluctant to carry more than one reference, more distinctive photographs of some of the endemic and other rare plants should have been chosen. The photos of Sea Lyme Grass, Northern Brome, Red Fescue, and Sand Heather, for example, are inadequate aids to identification.

With the reservations noted, I have no hesitation recommending this book to the widest possible audience. Well written, engaging, nicely illustrated, it is the best existing reference on the Athabasca sand dunes. It deserves a place in every public and school library in the province. And don't forget your nature-loving friends and relatives when it comes time to think of Christmas gifts.

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“So far as it is known, no other vertebrate [besides the birds called honeyguides] consumes wax. Microbes or bacteria in the digestive tract enable the unique birds to digest wax. Honeyguides can subsist on wax alone for a time, but it is not an adequate diet and the birds would starve without other food.”

Frank S. Todd, 10.001 Titillating Tidbits of Avian Trivia