

"Blip" is a book about increasingly pervasive global NNR (nonrenewable natural resource) scarcity and the inevitable consequence – the imminent and permanent collapse of human industrialism and industrial humanity.

Blip

**Humanity's 300 year self-terminating experiment
with industrialism**

by Christopher O. Clugston

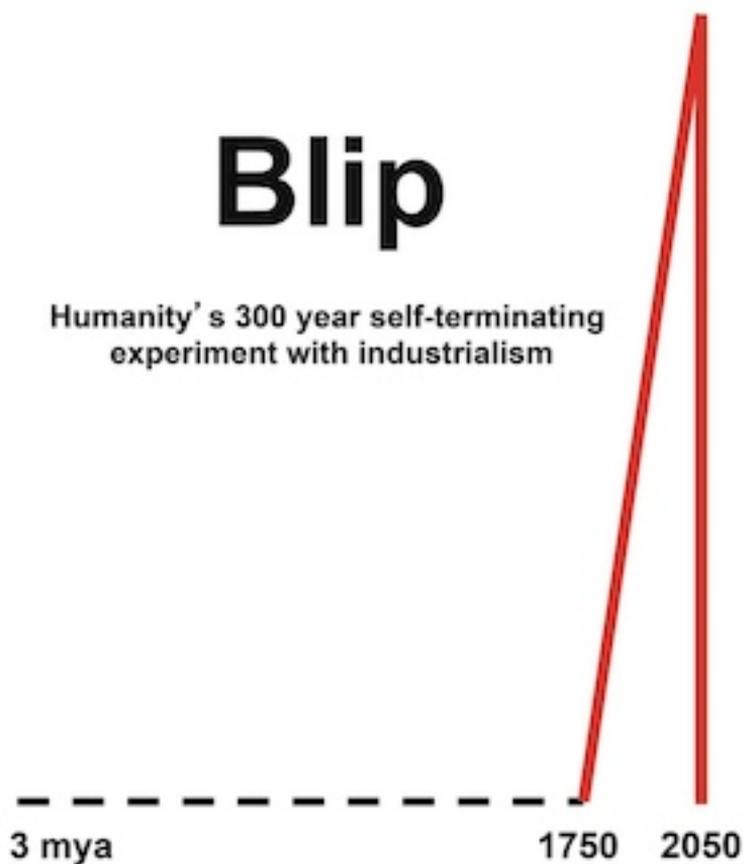
**Order the complete book from the publisher
[Booklocker.com](http://www.booklocker.com)**

<https://www.booklocker.com/p/books/10605.html?s=pdf>

**or from your favorite neighborhood
or online bookstore.**

Blip

Humanity's 300 year self-terminating
experiment with industrialism



Christopher O. Clugston

Copyright © 2019 Christopher O. Clugston

ISBN: 978-1-64438-068-0

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, recording or otherwise, without the prior written permission of the author.

Published by BookLocker.com, Inc., St. Petersburg, Florida.

Printed on acid-free paper.

BookLocker.com, Inc.
2019

First Edition

Library of Congress Cataloging in Publication Data
Clugston, Christopher O.

Blip Humanity's 300 year self-terminating experiment with industrialism by
Christopher O. Clugston

Library of Congress Control Number: 2019915698

Contents

Preface	v
Introduction	1
I. Earth Resources – The Fundamental Enablers	7
Chapter 1: Earth Resources	8
Chapter 2: Nonrenewable Natural Resources.....	13
II. Humanity – We Are Exceptional	53
Chapter 3: Human Origins	58
Chapter 4: Hunter-Gatherer Lifestyle Paradigm	64
Chapter 5: Agrarian Lifestyle Paradigm.....	83
III. Industrial Humanity – We Are Exemptional	111
Chapter 6: Industrialism Emerges	115
Chapter 7: Industrialism Flourishes	140
Chapter 8: Industrialism Falts.....	176
IV. Humanity’s Predicament – We Are Self-Terminating.....	221
Chapter 9: Industrialism Unravels	224
Chapter 10: Industrialism Collapses.....	302
Epilog – It’s been a Great Ride!	331
Endnotes and References	333
Appendixes.....	361

Introduction

What we do to enable our existence simultaneously undermines our existence...

Humanity's Predicament

...organisms using their habitat unavoidably reduce its capacity to support their kind by what they necessarily do to it in the process of living.¹ (Catton)

This self-terminating relationship between Earth species and their habitats is exemplified by a population of yeast being placed in a sealed vat of grape juice.

Yeast – single-celled microorganisms – thrive in such a habitat, and respond by gorging on the grape juice and breeding exuberantly. Inevitably, the irrupting yeast population consumes all the grape juice and experiences a “die-off”. As (human) luck would have it, the yeast population's misfortune results in the production of wine.

Another example of this self-terminating relationship is a population of industrialized human beings that have evolved on planet Earth, which was originally endowed with abundant finite and non-replenishing NNRs (nonrenewable natural resources) – fossil fuels, metals, and nonmetallic minerals.

Homo sapiens – the most ingenious species ever to inhabit planet Earth – thrived in this habitat. We persistently and increasingly exploited NNRs, increased our numbers extraordinarily, and enjoyed previously inconceivable prosperity.

However, to paraphrase Catton, we industrialized *Homo sapiens* have been unavoidably reducing the capacity of planet Earth to enable our existence, by what we have been doing – and must continue to do – to perpetuate our existence.

Inevitably, remaining globally available, economically viable NNRs would prove to be insufficient to support our industrial existence – a scenario that is occurring now.

The Ecological Perspective

The Nature-centered, ecological perspective is the lens through which we must view human existence in order to correctly understand human industrialism and its consequences.

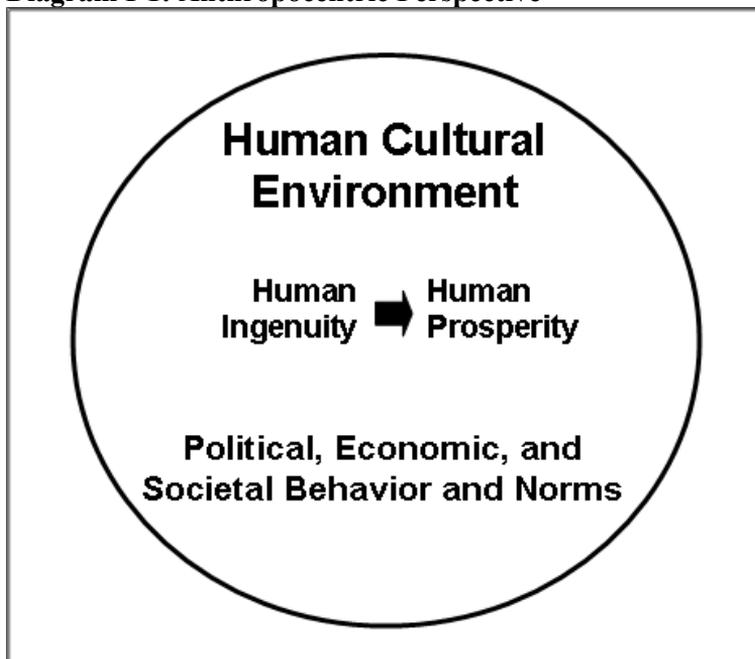
Regrettably, the lens through which the vast majority of humankind currently views human existence is the human-centered, anthropocentric perspective, which renders us incapable of accurately understanding our past, present, and future circumstances.

Viewed from the anthropocentric perspective:

- Human existence is governed by our cultural environment – i.e., the political, economic, and societal behavior and norms that determine human circumstances.

- The success of human industrialism and industrial humanity is enabled by a favorable cultural environment, within which human ingenuity can thrive.
- Improving human prosperity – increasing economic output and improving human material living standards – is enabled by prudently employed human ingenuity.
- Our species, *Homo sapiens*, is “exemptional” – having transcended, through human ingenuity, the natural constraints and limitations that encumber all “lesser species”.

Diagram I-1: Anthropocentric Perspective



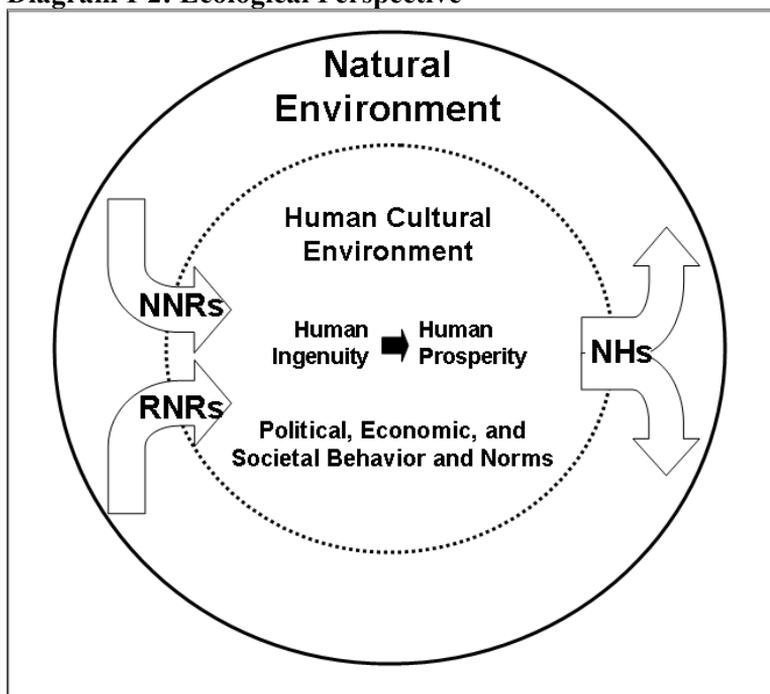
Viewed from the broader ecological perspective (See Diagram I-2):

- Human existence is governed by our natural environment, particularly by Earth resources (ERs) – i.e., renewable natural resources (RNRs), nonrenewable natural resources (NNRs), and natural habitats (NHs) – which enable all life on Earth.
- The success of human industrialism and industrial humanity is enabled by a favorable natural environment, within which a favorable human cultural environment can exist.
- Improving human prosperity – increasing economic output and improving human material living standards – is enabled by abundant economically viable NNRs.
- Our species, *Homo sapiens*, is exceptional – but not exemptional – and is subject to the same natural laws that apply to all other Earth species.

Viewed from the ecological perspective, while humanity’s cultural environment plays a critical role in influencing human existence, our cultural environment is enabled by and encompassed by our natural environment, which ultimately governs human existence.

Blip tells the story of humankind – with a focus on industrial humanity – from the ecological perspective.

Diagram I-2: Ecological Perspective



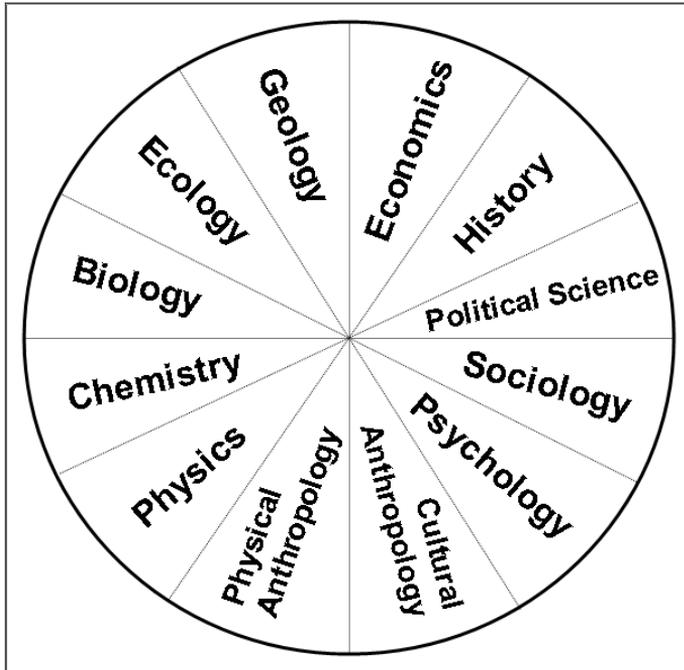
Blip

The premise of *Blip* is that increasingly pervasive global NNR scarcity is causing faltering global human prosperity, which is causing increasing global political instability, economic fragility, and societal unrest. This scenario will intensify during the coming decades and culminate in humanity's self-inflicted global societal (species) collapse, almost certainly by the year 2050.

Blip substantiates these seemingly inconceivable assertions by synthesizing the quantitative and qualitative evidence produced by hundreds of scientists, scholars, researchers, and analysts in the various physical sciences and behavioral sciences that address the origins and evolution of industrial humanity and human industrialism (See Diagram I-3).

Blip is comprised of four sections:

- Section I discusses Earth resources, the fundamental enablers of all life on Earth, including human life.
- Section II discusses the origins and evolution of humankind – and of “human exceptionalism”.
- Section III discusses the origins and evolution of human industrialism – and of “human exemptionalism”.
- Section IV discusses industrial humanity's in-process unraveling to collapse.

Diagram I-3: *Blip* Constituent Scientific Disciplines

Section I. Earth Resources – The Fundamental Enablers

Earth resources (ERs) – renewable natural resources (RNRs), nonrenewable natural resources (NNRs), and natural habitats (NHs) – are “things we use” to provide human subsistence and to enable human wellbeing.

A renewable natural resource is a naturally-occurring component of Earth’s planetary ecosystem that replenishes over time through naturally-occurring biogeochemical processes.

A nonrenewable natural resource is a naturally-occurring component of Earth’s planetary ecosystem that does not replenish on a time scale that is relevant from the perspective of “human time,” in the event that it replenishes at all.

A natural habitat is a naturally-occurring subsystem of Earth’s planetary ecosystem – an aggregation of RNRs and NNRs – within which the constituent entities exist in a self-managing equilibrium. An NH regenerates over time through naturally-occurring biogeochemical processes.

All Earth species, including *Homo sapiens*, are subject to a common Nature-imposed constraint (law): Earth resource overexploitation – i.e., depleting a natural resource at a rate that exceeds the rate at which it is replenished, or degrading a natural habitat at a rate that exceeds the rate at which it is regenerated – is unsustainable.

Section II. Humanity – We Are “Exceptional”

As a consequence of climate changes and resultant habitat changes that occurred in the Great Rift Valley of Eastern Africa over three million years ago, our pre-human ancestors evolved biologically in ways that enabled their human successors to become ingenious.

Ingenuity is the uniquely human cognitive attribute that differentiates humankind from all other lifeforms on Earth. Human ingenuity enables us to evolve volitionally, through changes in our ER exploitation behavior and our cultural behavior, in addition to evolving biologically, through random genetic mutation and natural selection.

Ingenuity enables humans to adapt to changing environmental circumstances and to improve our wellbeing through resourcefulness, technical innovation, efficiency improvements, and productivity enhancements.

As humankind evolved over time, the success of the human enterprise became less dependent upon the glacially slow and uncertain processes associated with biological evolution, and more a function of our unique ability to evolve rapidly and purposefully through human ingenuity.

During the course of human history, ingenuity enabled humankind to significantly diversify our Earth resource mix, and thereby transition from sustainable, passive Earth inhabitants – as is the case with all non-human Earth species – to essentially sustainable, sporadic Earth ecosystem modifiers as hunter-gatherers, to quasi-sustainable, deliberate Earth ecosystem managers as agriculturalists.

Humanity's capacity to “control our destiny” through ever-increasing human ingenuity – and ever-increasing Earth resource overexploitation and disruptive ecosystem management – had afforded humankind an unassailable competitive advantage over all other Earth species. As a consequence of this advantage, we had become exceptional!

Section III. Industrial Humanity – We Are “Exemptional”

The human desire for increased prosperity – i.e., increased economic output as the means by which to improve human material living standards – within the context of the exceptionally favorable natural environment and cultural environment that prevailed within mid-eighteenth century Great Britain, spawned our industrial revolution.

Since that time, our unparalleled ingenuity, as applied to persistent and ever-increasing NNR exploitation, has enabled our species to create previously inconceivable levels of wealth, which has afforded previously inconceivable human societal wellbeing improvement – i.e., unprecedented population growth, economic growth, and material living standard improvement.

Through our unique ability to produce NNR-derived infrastructure, machines, products, and energy, we have increasingly differentiated *Homo sapiens* from all other Earth species. In the process, we have become, by far, the most dominant species ever to inhabit planet Earth.

Not surprisingly, we have also come to believe that by employing human ingenuity on an industrial scale, we have liberated ourselves from the erratic vicissitudes of Nature that encumber all “lesser species” – we have become “exemptional”!

Section IV. Humanity’s Predicament – We Are Self-Terminating

Since the inception of our industrial revolution, we increasingly ingenious *Homo sapiens* have been depleting – persistently and increasingly – the finite, non-replenishing, and increasingly scarce NNRs that enable our industrialized way of life, and our very existence.

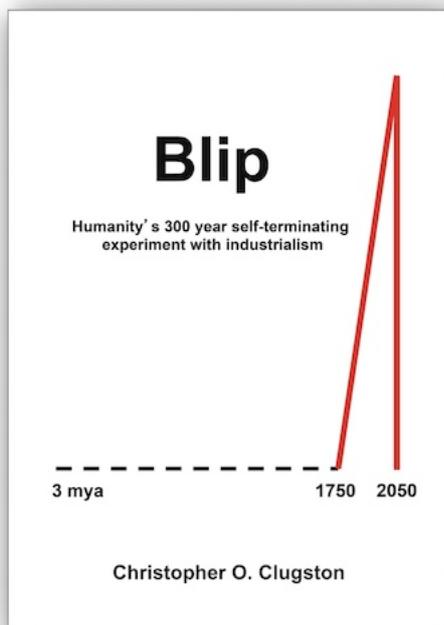
Regrettably, because the Earth resource utilization behavior that enables our species’ existence – and that is essential to perpetuating our existence – simultaneously undermines our existence, both our Earth resource utilization behavior and our resultant industrial lifestyle paradigm are unsustainable.

As a perverse consequence of our unparalleled ingenuity, we have become enmeshed in a self-inflicted, inescapable, and self-terminating predicament – we are doomed if we persist in our unsustainable NNR utilization behavior, and we are doomed if we do not – a predicament that will resolve itself catastrophically for humankind.

We will soon discover that we are not exemptional – that we are merely the extraordinarily fortunate beneficiaries of a one-time, rapidly depleting, natural legacy – and that we are the unwitting and unfortunate victims of our own ingenuity.

And, we will soon discover that humanity’s self-terminating experiment with industrialism represents a mere 300 year “blip” along the three million year timeline of human existence.

Nature treated human beings as winemakers treat the yeast cells, by endowing our world with abundant but exhaustible resources. People promptly responded to this circumstance as the yeast cells respond to the conditions they find when put into a wine vat.² (Catton)



"Blip" is a book about increasingly pervasive global NNR (nonrenewable natural resource) scarcity and the inevitable consequence – the imminent and permanent collapse of human industrialism and industrial humanity.

Blip

**Humanity's 300 year self-terminating experiment
with industrialism**

by Christopher O. Clugston

**Order the complete book from the publisher
[Booklocker.com](http://www.booklocker.com)**

<https://www.booklocker.com/p/books/10605.html?s=pdf>

**or from your favorite neighborhood
or online bookstore.**