

# Introduction



The world's great age begins anew,  
The golden years return,  
The earth doth like a snake renew  
Her winter weeds outworn.

—Percy Bysshe Shelley, *Hellas*, 1822

Restoration is the business and the spirit of the twenty-first century. Let's now expand on the subjects mentioned in the Preface, so you'll understand why this opening sentence is accurate, rather than wishful. Part of that understanding will come from facts and figures, and part from grasping three key concepts:

**1. The Trimodal Development Perspective** Development has three modes of operation, corresponding to natural life cycles: new development, maintenance/conservation, and restorative development. Each category produces its own realm of players.

Communities and nations normally start with new development, for obvious reasons. The maintenance and conservation mode then kicks in, to service this newly built environment (and to save parts of the newly-threatened natural environment). When their creations get too old to maintain, when the “highest and best” uses of their structures change, and/or when they run out of room and have to start redeveloping the land they've already developed, then the final, and longest-lasting, mode becomes dominant: restorative development.

When viewed from this “trimodal” perspective, the causes of many “mysterious” national and community problems suddenly become conspicuous, and strategizing becomes far simpler. The most interesting fact for business and government strategists is this: restorative development is now the fastest growing of those three modes, and it will soon be the largest of the three realms of development.

**2. The Interactivity of the Built and Natural Environments** This concept should be painfully obvious, but you'd never know it from the way we plan and run our world today. Industries involved in new development are, by nature, generally exploitative. They normally ignore the negative impacts of their activities, chalking them off as "the price of progress" in a manner disturbingly similar to the "justify anything" style of fundamentalist religious fanatics. When we attempt to restore the aging products of new development, however, the importance of the interrelatedness of built and natural becomes startlingly clear.

For example, city planners now know that a key to restoring the quality of metropolitan life is restoring the surrounding watersheds. Watersheds are their major source of both clean air and clean water, not to mention mental-health-enhancing green spaces and recreational areas. (A recent poll of U.S. public works directors revealed water supplies to be their top concern.)

Combining watershed restoration with infrastructure restoration is now a proven path to metropolitan restoration. Add just one more element to the mix (such as heritage restoration) and a near-magical renewal often results, as businesses become attracted to the area because it's now healthier, more efficient, and more interesting.

**3. The Eight Industries of Restorative Development** Most restorative development can be divided into two sectors: restoration of the natural environment, and restoration of the built environment. For practical applications, though, the realm of restorative development must be sliced more finely.

Here, you'll find it divided into eight industries, four natural and four built. The four natural environment restoration industries address ecosystems, watersheds, fisheries, and farms. The four built environment restoration industries address brownfields, infrastructure, heritage, and disaster/war.

## THE BIGGEST THING YOU'VE NEVER SEEN

This most vibrant new economic growth sector has been hiding in plain sight for over a decade, but has now become too large to ignore. More than a trillion dollars worth of restorative development takes place around the world every year, but it isn't yet perceived as an industrial sector—or as any kind of whole, for that matter.

(Actually, this trillion-dollar-plus figure I'm using is extremely conservative. Just one of those eight restoration industries—infrastructure

restoration—probably accounts for over a trillion dollars worldwide each year, all by itself. The heritage industry probably comes close to another trillion, if one includes all of its facets: adaptive use of old buildings; historic district redevelopment; and rehabilitation of architectural treasures, old forts, monuments, ancient artifacts, classic homes, etc. I’m purposely understating the size of the Restoration Economy to avoid accusations of exaggeration, because no one (yet) has an accurate tally [as we’ll see in Chapter 4].)

When formal recognition of the realm of restorative development begins, the Restoration Economy will accelerate its already impressive rate of growth. This heightened pace will encompass research, business, and technology. It will also spawn numerous new professional disciplines.

This book is designed to (1) help readers perceive the Restoration Economy, (2) stimulate the “gelling” of its multitudinous disciplines and organizations as a technical and economic community, and (3) guide business, investment, NGO (nongovernmental organization), and government leaders towards related revenue-generating opportunities.

## **OPENING OUR EYES TO THE RESTORATION ECONOMY**

What does this restorative activity look like? Looking from the window of my riverfront Old Town Alexandria, Virginia office, I see Washington, D.C.’s National Airport being restored on my left. The airport project combines three types of restorative development: replacement, adaptive reuse, and historic restoration. The first phase—replacement of several old buildings with the gorgeous new main terminal—is complete and has put \$450 million into a variety of deserving pockets. During that construction, an old hangar was adaptively reused for several years as an interim terminal. The second phase will be a complete restoration of the historic main terminal building, built in 1941.

Continuing this survey from my office window, we find, next to the airport, the 50-year-old Pentagon, which had started a 15-year, \$3 billion renovation/reconstruction project even before terrorists plunged an airliner into it. On my right is the about-to-be-restored (via replacement) Woodrow Wilson Bridge, projected to cost around \$2.5 billion. Just beyond the Wilson Bridge, at the mouth of the Potomac, is Chesapeake Bay, the world’s largest (and once it’s most economically valuable) estuary.

The collapse of the Chesapeake’s fish, shellfish, and crab harvests over recent decades stimulated a number of “expensive” pollution reduction

efforts over the years, with some measurable results. But on March 8, 2000, we moved beyond simple pollution control when the Clinton administration announced the \$100 million Chesapeake Bay restoration program, jointly funded with Virginia. This first phase tackles 35,000 acres of land, streams, and rivers, and is just the start of a three-state effort to conserve and restore a million acres of Chesapeake watershed. I can't see the bay, though, so we won't include those funds in this visual accounting.

Now let's look at the *new* development around me. On a clear day, I can make out five distant cranes where new office buildings are going up in downtown D.C. But casting the net that far away would also pull in a cornucopia of restorative development, especially infrastructure, historic buildings, monuments, and museums. Included would be the \$100 million restoration of the National Archives, begun in 2001, and the \$8.5 million restoration of the gorgeous U.S. Botanical Gardens building, completed in 2001.

So let's stick to my immediate area, from the Pentagon to the north, and south to the Wilson Bridge. There's just one significant new office building going up (at a cost of about \$40 million), plus a hotel and a few condos. Adjacent to the Wilson Bridge, on the Maryland side of the Potomac, 260 acres of riparian wetland is trying to become the problematic \$560 million National Harbor hotel, retail, and convention center complex. And that's about it for new development visible from my office.

Here's the point of this superficial survey: despite the fact that the National Harbor complex is the largest single commercial development project in Maryland's entire history, the \$6 billion of nearby restoration activity dwarfs the new development activity, by a factor of ten. Although this is a higher differential than you'll usually find west of the Mississippi, it's similar to many older eastern cities, even taking into consideration the unusually large size of the Pentagon and Wilson Bridge projects.

My visual inventory didn't mention the ubiquitous but less visible restoration activities in my local area. These include the sewer rehabilitation that's a monstrous problem over in D.C., the restorations of the Potomac and Anacostia Rivers, numerous eight- and nine-digit brown-field redevelopment efforts, and a multitude of historic residential restorations. The infamous "Mixing Bowl" interchange on I-95 (just south of D.C.) is also being rehabilitated, at a cost of about \$700 million.

Of course, there are many less visible *new* development projects, but the 10:1 ratio is likely to hold up pretty well in this neighborhood after everything is factored in. Nor does my survey include the less visible

aspects of restorative development, such as related educational activities. A 1995 survey of 51 U.S. universities revealed that 11 had graduate programs in restoration ecology (at that time, many European universities had undergraduate degrees in the subject, but no graduate programs). Bottom line: you'll be shocked to see how much restoration is going on around you, once you're sensitized to it.

What does this mean for you or your organization? If a sizeable portion of your business, your investments, or your community economic development plan is not related to restoration in some way, you're missing out on the greatest growth frontier of the twenty-first century. The good news is that, even though it already accounts for over a trillion dollars worldwide, many restorative development industries are not only still young, they are still being birthed.

Humankind seems to prefer change to derive from intelligent—or at least visionary—"leadership" at the top. But the low-profile, bottom-up emergence of the Restoration Economy is actually nature's way. Algae, invertebrates, and vertebrates were forming complementary relationships and communities millions of years before the structures and communities we call coral reefs came into existence. Trees grow thousands of root hairs, rootlets, subterranean fungal communities, etc., long before the first leaf breaks through the mulch. Even humans tend to build businesses, farms, and houses long before someone decides to identify a community and build public infrastructure, schools, churches, and other structures. (Modern exceptions are planned "smart growth" and "New Urbanist" communities. Historical exceptions include factory towns and nineteenth-century utopian experiments like Robert Owen's hybrid utopian factory town of New Lanark, Scotland.)

So, the fact that a plethora of restoration-oriented businesses and scientific disciplines already exist shouldn't make readers feel like they've been living under a rock. We've all been missing the big picture.

## THE TURNING POINT

By opening an EcoDeposit account, individuals and institutions can support community development and ecosystem restoration in the coastal temperate rainforest of the Pacific Northwest.

—Shorebank Pacific, promotional material, 2001  
[the bank's investments are increasingly focused on restoration of ecosystems, watersheds, farms, brownfields, and communities]

Sometime during the late 1990s, possibly the most important turning point in the economic development of the United States (and most other industrialized nations) was reached, and almost nobody noticed. For the first time in U.S. history, the restoration portion of many key sectors of our economy exceeded that of new development, and that of maintenance/conservation.

Only idiots make predictions in print—especially with numbers attached—but I’m having a moment of lunacy: sometime between 2012 and 2020, restorative development will account for over 50 percent of all development-related expenditures in the United States and Europe. This means that it will be larger than new development and maintenance *combined*. There will also be a highly significant amount of peripheral economic activity, such as the products and services these restorative organizations will require.

We’re reaching a “tipping point.” We’re on the verge of the inevitable transition from an economy based on new development to one based on restorative development—as have most long-lived civilizations before us. This shift is germinating a gargantuan new category of business opportunities that will dominate the rest of this century. Passing this tipping point might take another decade, but once we’ve entered a full-blown Restoration Economy, nothing will be able to reverse the momentum. As with all evolution, there will be winners and losers: those organizations unable to evolve out of new development mode will certainly be the losers.

Even more surprising than restorative development’s current size is its rate of growth, by far the fastest of the three modes of the development life cycle. A few professionals are uniquely positioned to notice this new development–restorative development turning point. One of those is Ellen Glew, Managing Director of Restore Media LLC, the firm that produces the “Restoration & Renovation Exhibition and Conference” twice a year. Glew has heard estimates of restoration’s market share growth that exceed 80 percent of the entire U.S. construction economy by 2010.

Whether the 2010 level turns out to be 65 percent or 85 percent, there is zero doubt that restoration is where the growth is. This situation will remain so until development of outer space, “the final frontier,” exceeds our enterprise here on Earth. Therefore, holding one’s corporate breath until new development regains the throne and this “restoration craze” is over will be a disastrous strategy. In fact, there are major areas of development—such as public infrastructure—in

which reconstruction and restoration already account for over 75 percent of expenditures.

Future historians may designate the year 2000 (they like round numbers) as the birth of the global Restoration Economy; the point at which centuries of one-way development reversed direction. “One-way” means forest into farm; wetland into factory; clean air/water into toxicity; living soil into lifeless dirt, depletion of non-renewable resources, etc.—with no counterbalancing activity in the opposite direction. We’re finally abandoning our addiction to building more of what we no longer want more of, while the desirable assets we already have, both built and natural, deteriorate, die, or disappear.

The new direction is to reverse that deterioration on all fronts, focusing on quality of function and diversity of components, rather than just more and bigger stuff. Businesses and governments are learning how to produce more assets and more health—not just more money—as a result of each profitable transaction. Of course, restoration itself isn’t new; what’s new is its adoption on such a massive, commercial scale, especially by developers.

Huge, burgeoning outlays of public and private funds are actively restoring our built and natural environments, and, in the process, our societies and economies. Defunct, century-old factories are becoming mixed-use retail and residence complexes. Flood-inducing denuded hills are being replanted. Fish are returning to rivers that have been freed of their engineered straightjackets. Decrepit inner cities are being revitalized. Decontaminated industrial sites are becoming parks, shopping centers, and residences. Decayed archaeological sites are being restored into vibrant tourism assets. And so on, all around the planet, even in countries that haven’t yet been fully industrialized.

Less developed nations also have fast-growing restorative development sectors, though they are generally a decade or so out of sync with industrialized countries. Their nascent Restoration Economies also tend to have different foci, due to their fast-growing populations and lesser amount of industrial and public infrastructure.

We are now in the “**Re**” century, when redevelopment displaces development, reconstruction outpaces construction, redesign is more common than design, reuse betters use, repaving keeps more people busy than does paving, reengineering dominates engineering, renew dethrones new, and revitalization supplants devitalization. We’re finally kicking our self-destructive addiction to sprawling new growth and replacing it with healthy, sustainable regrowth.

What's the big deal? Why is our transition to an economy based on restorative development, as opposed to new development, so important? Here are just three key factors:

1. Restorative development comprises the most efficacious remedy for many of our most pressing social and economic ills, addressing all spheres of activity: international, urban, rural, workplace, family, and individual.
2. Restorative development is the best way to breathe new life into both conservation (which is an insufficient balance to new development) and sustainable development (which has been progressing far too slowly). In the process, restorative development is becoming the solution to both our ecological crisis, and the economic/national security problems stemming from our impending natural resource crises.
3. Restorative development's coming dominance comprises the largest new category of business threats and opportunities, and is far more "real", more substantial, and more rewarding than the rise of the Internet and e-commerce ever were.

## HOW RESTORATION'S GROWTH IS REFLECTED IN OUR PRINT MEDIA

The growth of restorative development has reduced new development's market share, and nowhere is that situation more apparent than in the pages of *Urban Land*, the excellent monthly magazine of the Urban Land Institute (ULI). ULI is an organization of private land developers, architectural/engineering firms, mayors, and other professionals interested in the future of our metropolises. If the forces of new development were going to rebel against restorative development's invasion anywhere, this is where you'd expect to see it, either in articles attacking the intruder, or simply in the publication's turning a blind eye to restoration's presence.

Instead, the contents of almost every issue are generally devoted to about two-thirds restorative development, and one-third new development. Themed issues are often closer to 100 percent restorative development. Adaptive reuse, historic restoration, infill, brownfields reindustrialization, waterfront revitalization, urban stream restoration, military base redevelopment . . . such articles comprise the majority of every issue, with just a token smattering of new development.

As we'll see later, this is why restorative development has exploded with so little controversy: rather than putting new developers out of busi-

ness, it has seduced them via a combination of greater profits and more interesting projects. Industry leaders saw something better, and they abandoned new development with hardly a backward glance. New developers morphed into restorative developers.

The industries of maintenance/conservation have less of a “philosophical” clash with restorative development, so you’ll find that most of their relevant publications are loaded with restorative content.

For instance, *Land and Water* magazine, founded in the mid-1900s, serves major landowners, contractors, government engineers (soil and water districts, departments of transportation, etc.), and landscape architects. It used to call itself “The magazine of water management and erosion control,” but in 1992, its publishers saw the future. Reflecting the changing interests and activities of its readership, the magazine’s slogan changed to “The magazine of natural resource management and restoration.” Likewise, *Old-House Journal*, launched over three decades ago, changed its slogan in February 1999 to “The *Original* Restoration Magazine,” in reaction to the recent onslaught of competition from other restoration-focused periodicals.

Looking at the table of contents of the average issue of *Land and Water*, the reality is even more obvious, because over half of the content is usually about restoration. It should be noted that this is not a “green” magazine: it’s not normally read by environmentalists or ecologists. Many of the articles deal with engineering approaches from the bad old days, such as “controlling” floods with levees, and you’ll still see titles like “Taming Those Urban Streams” (the trend is toward “rewilding”). The restorative impact is clear, though, in the titles of ten out of sixteen articles, taken from a randomly selected issue (Jul/Aug 2001). All deal with restoration or wildlife habitat creation, though that’s not always evident in the titles:

- “Land Reclamation: Creation of Peck Farm Park’s Dolomite Prairie”
- “A Beautiful Urban Tributary Stream Is Unearthed”
- “Pond Apple Habitat Wetlands Restoration”
- “Wetlands Mitigation Paves the Way for Pennsylvania Highway Project”
- “The Ideal Roadside Seed Mix: A Lesson in Native Seed Design”
- “Management of Invasive Species in Restoration Projects”
- “Illinois’ Premiere Streambank Restoration”
- “Pueblo of Santa Ana Bosque Restoration”
- “50 Years of Land Improvement”
- “Rehabilitation and Revegetation of a Landslide”

The same goes for popular (as opposed to professional) publications. The August 1999 issue of *Islands* [travel] magazine had a “millennial” special section called “The Future of Islands,” profiling 10 projects that demonstrated trends crucial to island development in the twenty-first century. It didn’t have an explicit restoration theme, but

- the first article referred to “the *resurrection* of traditional culture” and described the use of indigenous materials to contain and *remediate* a disastrous oil spill at sea [all emphases added, including all below];
- the second and third dealt with conservation and passive *restoration* of fisheries and indigenous medicinal plants (and related knowledge);
- the fourth article profiled Stanley Selengut, the ecotourism developer who designed and was the original owner of Daniel’s Head Village, a Bermuda resort based on *restorative development* (featured in Chapter 15 of this book);
- the fifth article, “*Restoring Rare Species*,” contained this passage: “. . . the Soskos could become one of the greatest resorts-plus-wildlife sanctuaries on earth, because of its outstanding opportunities to *restore* muntjac deer, pangolins, civets, and ferret badgers.” About biologist James Lazell, writer Susan Yim said, “He’s also had great success *reintroducing* species to places where they once lived—in a sense, *restoring species back to the future*.” Lazell himself was quoted as saying, “The good news is that there are people out there besides me trying to save the natural diversity of islands and *restore* them”;
- the sixth article profiled Desmond Nicholson’s Antigua projects: “Nicholson has helped in the dockyard’s *restoration* and is now . . . *rebuilding* a naval officer’s [1855] house for use as the Nelson’s Dockyard Museum [which] is a model for the *transformation of historic buildings* throughout the Caribbean”;
- the seventh discussed conservation and passive *restoration* of fruit bats in Micronesia, because the trees need their pollination services, and increased trees would “*replenish* soil fertility”;
- the eighth article dealt with heritage *restoration* and *adaptive reuse* on Dominica (one of my favorite places). Describing artist Lennox Honychurch, Yim said he might be found “directing the *restoration* of a historic 18<sup>th</sup> Century fortress . . . [or] *converting* an old marketplace into a craft market and museum . . .”;

- the ninth profiled a story of preserving and *revitalizing* native arts via “increased respect for the few remaining women of Mindanao who maintain the body of textile skills and lore”;
- tenth was an article on *restoring* native plant species—and *rehabilitating* military damage—on Lanai, Hawai’i, through commercial cultivation of indigenous species: “They’re often rare and endangered,” [Jon Kei] Matsuoka says, pointing out that these plants are intended for *reforestation* on the island of Kahoolawe, which for years was a U.S. navy bombing target. (Another wonderful project that I wish I had space to describe further.)

Whether or not *Island’s* editors noticed the continual thread of restoration in this issue, they certainly had picked up on our entry into “the Century of Restoration.”

### **What Restorative Activities Is this Book Not Including?**

Many restoration industries have appeared or expanded quite recently, but there are many old, stable restorative professions and industries. This well-established, slower-growth side of restorative development also includes rehabilitating paleontological or archaeological finds, restoring classic vehicles (boats, aircraft, cars, carriages, etc.), and so on.

One might wonder what such “trivial” hobbyist activities or luxury items have to do with revitalizing our world. Am I going to treat every restorative activity as a part of the Restoration Economy? If so, does that make it good or important? For the purposes of this book, the answer is twofold: (1) yes, almost every restorative activity can be considered part of the realm of restorative development, and (2) no, not all will be included in this book.

What is the conceptual difference between restoring an antique motorcycle and restoring a bridge, or between restoring an heirloom gold brooch and restoring a historic home? All add value to existing assets. Both increase wealth without significantly depleting wealth or health elsewhere. The main difference is the size of the project, and the number of people who benefit. That said, there will be few mentions of hobbyist-, art-, or museum-related restoration in these pages.

### **Professional and Organizational Opportunities Abound**

How wonderful it is that nobody need wait a single moment before starting to improve the world.

—Anne Frank, *The Diary of Anne Frank*

Opportunities in restorative development are not limited to the biologists, contractors, doctors, civil engineers, and large companies that you'd expect to be associated with solving the problems of insufficient space, aged infrastructure, or deteriorating environmental (and human) health.

A wide range of restorative professions, products, and services is emerging: from software and seminars, to stoneworking tools and model ecosystems, to videos and tours. Also needed are entirely new inventions for performing restorative work, along with a profusion of new, restoration-related service companies, NGOs, professional societies, and consultants.

We're good at taking things apart. We need to learn how to put them together. If you think you can't make money in restoration, [just] take your car into the shop or your body to the doctor.

—David Brower with Steve Chapple, *Let the Mountains Talk, Let the Rivers Run*, 1996

Young and old, organizations and professionals, public and private—all are delightedly exploiting these lucrative new markets, these eight industries of restorative development. Around the turn of the millennium, Dr. Joseph Westphal, the assistant Army secretary for civil works (the civilian responsible for overseeing the Army Corps of Engineers) told the Corps' leaders, "I think our real next opportunity is to be ready to build the infrastructure man will need to settle the planets."

A new frontier such as outer space will certainly revive the new-development portion of our economy, but it won't happen tomorrow. To find today's unlimited frontier of opportunity, we must look "behind" us, at the territory we've already settled or exploited.

## OTHERS HAVE SEEN THIS COMING

This is not the first book to mention the concept of a "Restoration Economy":

- Paul Hawken's wonderful *The Ecology of Commerce* (1994) discussed the theoretical possibility of, and need for, a "restorative economy" and offered a few early examples.
- In Stewart Brand's modern classic, *How Buildings Learn* (1994), he repeatedly demonstrates (in a chapter titled "Unreal Estate") how insufficient attention to the restoration and reuse of buildings has been undercutting our economy.
- William Jordan III, founder of the journal *Ecological Restoration* has long discussed how restorative activities often animate profound

changes in cultural values. In 1997, Eric Higgs (in an article entitled "What is Good Ecological Restoration?" that appeared in the *Journal*) posited restoration as a distinct cultural mode.

However, I believe mine is the first book to unite the restoration of both natural and built environments. I further believe this to be the first book to document the rise of a *real* Restoration Economy, rather than "merely" envisioning or hoping for one.

Randy Stemler . . . is the program manager for the MRC Reforestation Program. It's part of what he calls the "restoration economy." "There's a lot of money being spent locally focused on natural resource reinvestment. We go in and identify sites where it's biologically appropriate to do reforestation. Then I arrange for financing, train the crews and plant trees where they were once growing." In its 10 years of operation the program has been sponsored by several northern California catalog companies. Smith and Hawken was the first.

—**Bob Doran**, "If you rebuild it . . . will they come back?" *North Coast Journal Weekly*, March 2, 2000 [discussing the 18th Annual Salmonid Restoration Conference and the work of the Mattole (watershed) Restoration Council]

These first two decades of the new millennium comprise the greatest window of opportunity. During this period, healthy organizations will learn to perceive restorative development's often-camouflaged opportunities in their eight favorite hiding places:

- Ecosystem and species restoration
- Aquifer recharging and waterway/watershed "rewilding"
- Estuary, reef, and pelagic fishery regeneration
- Rural economic revival and farm redevelopment
- Brownfields remediation, and redevelopment of closed military bases
- Utility restructuring and public infrastructure rebuilding
- Heritage site renovation/adaptive reuse of historical buildings
- War reconstruction, resettlement, and disaster recovery

As mentioned in the Preface, I've spent much of my last 20 years exploring our planet's last remaining healthy jungles, reefs, and other ecosystems. I must be a masochist, because I return to some of my favorite nature spots from time to time. This allows me to perceive their decline, which is often tragic to the point of lumpy throat and leaky eyes. I've simultaneously encountered almost universal degradation of communities and cultures. This, too, is deeply tragic, and profoundly moving.

After witnessing a lifetime of marginally successful environmental efforts, failed urban revitalization plans, and the general decrease of satisfaction with our lives and our world in general, a bright light has suddenly appeared at the end of the tunnel.

In every development-related industry I surveyed over the past four years, what has been most exciting to the investors and business planners has been the growth of restorative projects. This made me realize that tremendous untapped growth potential was awaiting the day that this immense economic sector came together and was recognized.

The first step towards this goal is giving it a name: the Restoration Economy. Come with me now on a guided tour of this unlimited new realm of economic growth, social revitalization, and planetary health.