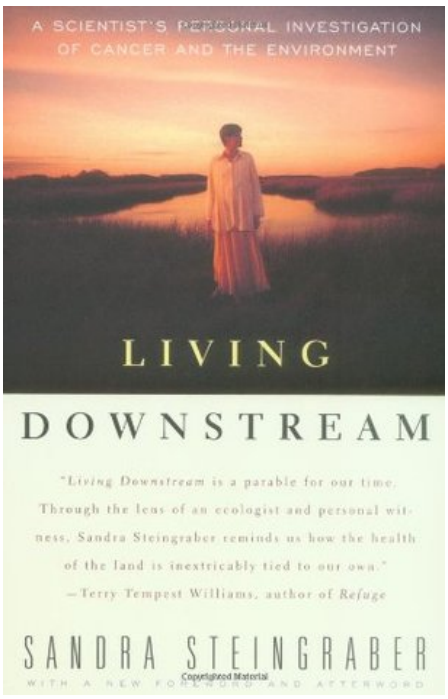

Living Downstream: A Scientist's Personal Investigation of Cancer and the Environment

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With this eloquent and impassioned book, biologist and poet Sandra Steingraber shoulders the legacy of Rachel Carson, producing a work about people and land, cancer and the environment, that is as accessible and invaluable as *Silent Spring*--and potentially as historic.

In her early twenties, Steingraber was afflicted with cancer, a disease that has afflicted other members of her adoptive family. Writing from the twin perspectives of a survivor and a concerned scientist, she traces the high incidence of cancer and the terrifying concentrations of environmental toxins in her native rural Illinois. She goes on to show similar correlation in other communities, such as Boston and Long Island, and throughout the United States, where cancer rates have risen alarmingly since mid-century. At once a deeply moving personal document and a groundbreaking work of scientific detection, **Living Downstream** will be a touchstone for generations, reminding us of the intimate connection between the health of our bodies and the integrity of our air, land, and water.

"By skillfully weaving a strong personal drama with thorough scientific research, Steingraber tells a compelling story....Well worth reading."--Washington Post

Living Downstream: A Scientist's Personal Investigation of Cancer and the Environment Details

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From Reader Review Living Downstream: A Scientist's Personal Investigation of Cancer and the Environment for online ebook

Ivana says

A maddening and exhilarating read. Though the book is over 20 years old, unfortunately not much has changed. We are still spilling poisons into our environment; into our water, soil, and air. And still, the long-suspected causalities between environmental factors and cancers have not been studied in earnest, for a variety of negligent reasons. So as a result, the agencies that are supposed to protect us deem that such and such chemical's deleterious effect on human health cannot be confirmed, or in some cases they will claim that the same chemical is harmless, but this "conclusion" stems from lack of research even with sufficient evidence already available that can establish clear causality.
It's difficult to read something like this. The more I know, the angrier I am, and more powerless I feel.
I honestly feel this should be mandatory reading for every single human being. Superbly researched and written.

Myth says

I've tried to avoid adding books I've had to read for school, because I think when I don't have a choice it's hard to like something. However, there are books I learn from and enjoy that I read for school. I've decided it's only fair to review them as well.

This book was required reading for an English class. The class had a weird mix of majors. I've met science majors and creative writing majors in this class, but I couldn't point out one person I know to be an English major.

I learned a lot from Steingraber's book. I'm for her cause and I understand the importance of what she's trying to rely. The information she relays is kind of scary, but it's good for us to get a wake up call. I'll approach my choices in life a little more carefully. In that way this book was successful in reaching its goal.

I didn't particularly like the book itself. The changes in narrative were distracting to me and, with a journalism/creative writing kind of background, I found her science hardcore and her prose melodramatic.

Her narratives brought out an interesting discussion about the individual preference and audience. Science students talked about how the book dragged, how the prose parts seemed irrelevant and how she couldn't get to the point. The more scientifically inclined were also on the lookout for where she dug up her facts. The creative writers found the book to be boggling with all the facts and figures she throws at them and enjoyed the breaks in data she took via personal story.

There seemed to be a general consensus that this book punches the reader with facts. For some, it was to such a point that it made them feel dull to statistics and numbers. Like many in the class, I felt so totally overwhelmed with her fact throwing I could hardly make it through each chapter.

It seems like Steingraber was trying to appeal to a wide general audience by including these two types of writing. A type of writing to appease the critically minded and a type of writing to make it more accessible to anyone and draw people into the personal side of this problem.

Steingraber is a biologist and creative writer, but I don't think she understands how to integrate these two

loves to make something that flows easier, but also gets her message out. I've been exposed to scientific and creative writing and I could see that in these individual categories she knew what she was doing. I would've preferred they mingled instead of co-existed in her writing. I think a journalistic prose would server her purpose well.

Danielle says

I couldn't finish this book. That doesn't mean it wasn't well written, but it was just too slow for me to get into.

Melissa says

I highly recommend this book to anyone who loved Rachel Carson's Silent Spring. In many ways, this is a sequel to the original book that brought the danger of pesticides and pollutants to the public's attention. Mixed in with all of the scientific talk about cancer cells, carcinogens, and pollutants are stories of the author's personal battle with cancer, the struggles of those in her home town who fought (unsuccessfully) for someone to recognize the high rate of cancer among residents, and personal anecdotes about how the author conducted her research for this comprehensive book.

Some highlights: an indepth look at how the military-industrial complex turned to civilian life for someplace to dump all their chemicals after the war (hello, pesticides and herbicides!) in the chapter 'War'; a gutwrenching realization that most of what we know about cancer comes from torturing animals ('Animals'); a story of communities banding together to prevent incinerators from moving to their towns; an interesting comparison between the facts about environmental factors causing cancer and how people are taught most cancers can be prevented through behavior.

Overall, a bit of a downer to read (we're all poisoned and many of us will die because of it), but a fascinating read.

Chris Demer says

This is a remarkably well written and well documented look at the environmental causes of cancer. The author scrupulously researched patterns of cancer incidence and was able to connect this to toxic-release information available under right-to-know laws.

As a student of the environment, as well as a cancer survivor and biologist, she is able to connect the dots between the cellular changes that cause cancers and the millions of tons of toxic substances used and dumped into the environment. She makes a stunning comparison between information in Department of Health brochures linking "lifestyle" issues to cancer and a human genetics textbook which attributes about 90% of cancers to poisons in the environment.
Indeed, it is still politically incorrect to point out that cancer incidence since the synthesis of new organic chemicals for use as pesticides, herbicides, fertilizers, solvents, dyes and substances used in the manufacturing of plastics (among other things) has risen dramatically. The increases in cancers since the middle 1900s has directly coincided with the influx of these heretofore non-existent or extremely rare

molecules.
Ms. Steingraber references Rachel Carson several times and reminds us that even though several very toxic substances have been banned for use in this country thanks to "Silent Spring" some of these molecules are extremely durable and continue to take their toll, PCBs (polychlorinated biphenyls) in particular, which are augmented on their way up the food chain. In addition, some are still manufactured and sold cheaply to third world countries for use as pesticides and herbicides.
Having grown up in a farming community in Illinois, on the fringe of what was once the vast prairie, the author has seen personally the increasing usage of chemicals in farming - and the increasing cancers in her community. She is also very much aware of alternatives in maintaining or even improving crop production by safer means.

This is a really important and really readable book. I highly recommend it.

Rae says

Why do I read books like these? They just make me mad. I'll never think about water in the same way again. Sometimes books on the environment and its toxins are just unsubstantiated sensationalistic rants. This one is not.

Gerald Kinro says

I read the newer revised edition. With a very polished narrative, the author fuses her personal bout with cancer with scientific data on cancer, carcinogens, and the environment. It is well organized and documented. I liked the read. In simple language, she explains the role of carcinogens in the propagation of cancerous cells, and endocrine disruption.

I would have liked it better if she had included charts and graphs to illustrate some of the trends and to illustrate some quantitative materials. She does mention the Toxic Substances Control Act (TSCA), the Federal Insecticide, Fungicide and Rodenticide Act, as well as community right to know legislation. What could have been included are mentions of The Resource Conservation and Recovery Act (RCRA) and the Food Quality Protection Act (FQPA) that attempt to address some concerns about exposure and the disposal of hazardous waste. While not perfect, they are attempts at and have ameliorated many of our problems. I also would have like it better if it had some mention of the phenomenon of bio-magnification, the increase in chemical concentration as it moves up the food chain.

Like does not necessarily equal agree. While I do not dispute most of the material put forth, I take a more conservative view of endocrine disruption that I feel needs much work. Also, unlike the author, I do not see a practical realistic solution at the moment. Solving this, like solving many of our problems, will take super-human sacrifices by all. Will our populace be willing, especially those whose careers hang in the balance like coal miners, industrial workers, and consumers? After all, the manufacture of this computer that this review was written with probably produced carcinogens galore. Also, it already requires six years and hundreds of millions of dollars of trials to register a single pesticide with the EPA. Can we practically evaluate every chemical and their interactions with one another?

Anastasia says

Over a month after finishing the book, I finally have my review ready:
Living Downstream was a very dense book, and reading it was sometimes quite depressing. It really served to raise my awareness about how little regulation of chemicals there is in the US. This lack of regulation and oversight means that untold pounds of chemicals are released into the air, ground, and water every day, and individually and in combination, many of these chemicals put us at greater risk for getting cancer. Contrary to the public perception that so much risk of cancer is due to lifestyle choice (i.e., "If you'd only stopped smoking, you wouldn't have gotten lung cancer."), the reality is that exposure to toxins from our environments is a really big factor and one which we can hardly do anything about at the individual level.

Here are some salient (sometimes shocking, outrageous, infuriating, thought-provoking) bits from the book:

Pg. 27: Rachel Carson (the author of *Silent Spring*) died of cancer, but wouldn't let anyone know she suffered from it as she didn't want it to diminish the perception of her scientific objectivity.

Pg. 47: More than 40% of Americans are expected to contract cancer in our lifetimes. That's 2/5 of people. *That's two out of me and my four siblings.*

Pg. 102: Out of the approximately 80,000 chemicals in circulation, "only 2 percent of them have been thoroughly assessed for toxicity." New chemicals aren't required to be tested: manufacturers must "divulge what they know about the risks of any new chemicals" they want to put on the market. Pre-existing chemicals that are found to be dangerous aren't prohibited. Instead, the EPA must "balance economic benefits of any chemical against its health risks." Chemicals can only be regulated if the health risk is considered "unreasonable."

Pg. 105: "Under EPCRA, any citizen can obtain a list of the reported toxic releases in his or her home county by typing their ZIP code" into a government website: www.epa.gov/triexplorer

Here's another website to check out, the Right to Know Network: http://www.rtknet.org/

Pg. 124: "Half of all endosulfan (an insecticide) used each year is used in California, and it is a common contaminant in the Imperial Valley's Alamo River." Despite finding that the endosulfan residue in food and water "posed unacceptable risks," the EPA allowed it to stay on the market. Endosulfan can speed the growth of human breast cancer cells.

Pg. 130: "With the invention of mauve in 1854, synthetic dyes began replacing natural plant-based dyes in the coloring of cloth and leather." The people who worked with these chemicals had skyrocketing levels of bladder cancer. "Aromatic amines" were the culprit, and these were added to rubbers and cutting oils to serve as accelerants and antirust agents? machinists and metal workers also began to get bladder cancer.

Pg. 153: Obesity and weight gain are risk factors for several cancers, including esophageal, pancreatic, uterine, colon, and post-menopausal breast cancer. *I never knew obesity was a risk factor for cancer. Is this something everyone knows?* Childhood obesity may contribute to breast cancer risk by hastening the onset of puberty: as a group, chubbier girls develop breasts at younger ages than leaner girls; early sexual maturation is a known risk factor for adult breast cancers. *It is? I didn't know this.*

Pgs. 164-165: California is the only state with a comprehensive pesticide registry that requires all growers to report all agricultural pesticide use.

"The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) is a law that protects people from

pesticides and ensures their registration. However, this law has a cost/benefit clause that allows risks to humans, such as farmworkers, to be weighed against the economic benefits of the pesticide in question." Another quote: "The fact that such limited regulation exists is misleading if it causes the public to believe that farm workers are protected from potentially carcinogenic substances when they are not."

Pg. 178: Cancer diagnoses attributable to air pollution comes from a 2009 EPA investigation called the National Air Toxics Assessment, which "looks at air contaminants within all counties in the US and concluded that ALL 285 MILLION U.S. RESIDENTS HAVE ELEVATED CANCER RISKS FROM EXPOSURE TO AIR POLLUTION." The risk isn't evenly distributed, though: some counties in Southern Cal (as well as other states) have significantly higher risks.

Pg. 179: Lung cancer among non-smokers is the 6th most common cause of cancer death in the US. 20% of those are attributed to second-hand smoke. But the majority of nonsmoking lung cancers remains unexplained. (Maybe air pollution.) US and European studies are finding higher rates of lung cancer in urban non-smokers (as opposed to those who live in rural areas).

Pgs. 192-193: Water utilities must inform customers which pollutants have been detected in our "drinking water and whether water quality standards have been violated." 10% of the nation's water is out of compliance BUT "the legal limits for each chemical have been arrived at through a compromise between public safety and economics." It's not based on health—it's also based on how expensive it would be to reduce the contaminants to particular levels. Enforceable limits had, in 2009, only been established for 90 contaminants. "...of the 216 chemical pollutants identified as breast carcinogens in animals, at least 32 are found in drinking water, but only 12 of them are regulated under the Safe Drinking Water Act." Also unregulated at the federal level are pharmaceuticals and ingredients found in shampoo, make-up, insect repellants, and deodorants.

Pg. 195: Volatile organic compounds (VOCs) are carbon-based synthetic chemicals that are unstable, that is they vaporize more readily than water; most of which are suspected carcinogens. VOCs often contaminate tap water and are easily absorbed by our skin and even enter our breathing space when they evaporate. Check this out: "*The simple, relaxing act of taking a" mother-fucking "bath turns out to be a significant route of exposure to volatile organics." !* "In at least two studies, the exhaled breath of people who had recently showered or bathed contained elevated levels of VOCs, including chloroform." "Showering in an enclosed stall appears to contribute the greatest dose" due to inhaling the steam. And guess what? The hotter the water, the more VOCs you breathe!

http://www.ewg.org/tap-water/getawate...
http://water.epa.gov/drink/contaminan...
http://sfwater.org/detail.cfm/MC_ID/1...

Pg. 243: California has passed legislation to establish the first state-based biomontoring program. http://www.cdph.ca.gov/programs/Biomo...

I know nobody's going to read this whole review, but I'm glad I read the book and that I copied down/summarized these crazy quotes. It is too easy to forget this stuff and I want to be able to take action on these issues.

Rebecca says

I had to read this for my Environmental Justice class. It was very informative and I enjoyed the personal take on cancer and the environment. What I didn't like were the constant references to Rachel Carson.

Kristyn says

Now believe me, I probably would never have picked up this book if it wasn't for my Sociology of Health & Illness course I was taking. We needed to pick a book to read that had to do with health, so instead of doing the book Fast Food Nation, like every other person in the class [and because I had already read it before in high school], I decided to go with a book my professor mentioned in class, a book that made me look more deeply into cancer. Living Downstream: An Ecologist's Personal Investigation of Cancer and the Environment is not only filled with valuable information about the environment we live in today and how it affects our bodies, but it also has the personal story of the author, Sandra Steingraber.

“There was once a village along a river. The people who lived there were very kind. These residents, according to parable, began noticing increasing numbers of drowning people caught in the river’s swift current. And so they went to work devising ever more elaborate technologies to resuscitate them. So preoccupied were these heroic villagers with rescue and treatment that they never thought to look upstream to see who was pushing the victims in.”
– Steingraber, 1997

Instead of focusing on the prevention of the 80% of cancers due to environmental exposures, the society is too wrapped up in curing this disease to even bother what is causing the onset. These environmental toxins, such as herbicides, pesticides, petrochemicals, and radiation are linked to many types of cancer. It's a complex web of causation that causes cancer, including genes, life-style, and the environment. In 2009 alone, 1.48 million people in the U.S were told that had cancer - that's 4 thousand a day! As a future Child Life specialist, I will be working with children in hospitals helping to normalize their experience. Cancer happens to be the most common disease killer of American school children, as stated in Steingraber's book. Prenatal exposures to environmental carcinogens create the threat of cancer in children. The information about childhood cancer intrigued me, because I know cases such as these may come along, and I need to realize that cancer has many ways of appearing in a child's life.

I love that she included her personal voice in the book, because it really allowed me to connect with the author, as well as the causes behind cancer. On top of that, Steingraber has without a doubt done her research , and I don't think for a second that she held back any information. She even went as far as including the limitations and the relevance of the topic at hand.

I think that we can all read this book and begin to understand that the change starts with us, and in order to help others we must create a way to stop this web of causation from causing cancer.

Brenna says

Sandra Steingraber is one of my environmental heroes. Secretly I want to be like her "when I grow up," a scientist who is able to convey important scientific knowledge to the lay public. Her style seamlessly blends emotion-stirring imagery with scientific research. This book is her personal inquiry into the environmental origins of cancer, particularly the bladder cancer she suffered in her early 20s, and the throat cancer that ultimately took her best friend's life.

Among the things I really appreciated about this book were how Steingraber organized her inquiry by routes of exposure: water, air, earth, etc. She investigated contaminants and the way that we come into contact with them, and incidences of cancer correlated with this exposure. There is a wealth of knowledge in this book, clearly gleaned from extensive research by Steingraber.

While not a "page-turner" per se, I never found this book boring or dry, and rather appreciated being able to put it down for awhile and pick it back up without losing the narrative. I think this is an important book that should be read by everyone because the message is so important: we need to understand the connections between environmental contaminants and our own health. Unlike the studies that pop up daily in the popular press touting the next "cancer fighting miracle food," Steingraber presents a full picture, including the limitations of scientific knowledge and understanding. This book provides a critical foundation for understanding what is currently known, and where we need to go.

Karen says

I first saw the documentary based on this book because my friend had worked as part of the film's outreach team. The film was beautifully done, and the Q&A session with Steingraber and the director was thought-provoking. I decided to read the book for a nonprofit law and policy class.

I read Rachel Carson's "Silent Spring" in high school, which opened my eyes and terrified me at the same time. "Living Downstream" is definitely reminiscent of "Silent Spring", but Steingraber employs her background in poetry to give the reader a personal perspective and a bit of a "rest" from the scientific terminology.

Steingraber has family members who are conventional farmers, as do I, so I thought she showed respect for farmers while still holding them accountable. She also poses some solutions that have been realistic and successful in Canada and Europe.

After reading the last page, I closed the book feeling angry about the U.S.'s negligence when it comes to chemicals, yet educated on some clear steps that can be taken to begin changing course.

Reuel says

A bit difficult to read, as I read it while Lorene was struggling to fight breast cancer for the third time. Makes a powerful point about the consequences of the U.S. ignoring the precautionary principle and waiting to see if enough people get cancer to force a chemical to be banned before any action is taken.

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suz says

from reviewon Amazon by Michel Aaij (Montgomery, AL) **Amazon link**

Here is a great book I think we all should read. Steingraber's thesis is relatively simple: environmental factors play a much larger role in the increase of cancer than hitherto assumed by individuals, public health officials, and regulators, and we should act accordingly. Her argument is well-researched and takes into account many of the pollutants we find in our air, water, earth, and bodies, and is presented intermittently as

narrative and analysis.
I like the structure of the book, the organization into chapters titled "time," "space," "war," and the like. I also like her alternating personal narrative (she is a bladder-cancer survivor, a native of Illinois, a graduate student, a researcher--we find out lots of things) with the cold hard facts and sometimes the fuzzy facts of cancer research and regulation of chemicals. The only thing that holds me back, which is why I gave it four stars, is that the book is a bit too long for my taste at almost 400 pages--I, a layperson, could have done with a bit less detail (though I understand she's covering her bases) and a bit more politics (though I understand she's being careful, not naming too many names).

The best chapter is the final one: if you come across this book and have other things to do, at least read the last chapter--most convincing is her deconstruction of the public policy of 'personal responsibility': sure, some cancers may be associated with personal lifestyle, but more important are the things we have little individual control over, such as the air we breathe, the land our kids play on, the streams we swim in. Blame, Steingraber implies/states (she's not always so outspoken), lies less with us citizens, taxpayers, cancer patients, than with the companies that manufacture products and byproducts that may be carcinegous and are simply allowed to do so until proven otherwise, and the regulators (our government, at all levels) who let them do so. Bravo--it needed to be said, and I'm glad Steingraber did it.

Silvia says

This book opened my eyes to lots of the problems with all types of pollution that can enter our bodies. I don't know if I can ever live in Iowa. It is a must read. I would like to see more results of correlation studies of types of cancer related to what is in the local environment, workplaces, and ground water.
