Chapter 1 : The Darkening Sea by Kolbert by Justine Thomas on Prezi

The Darkening Sea. By Elizabeth Kolbert. The New Yorker, November 20, P. ANNALS OF SCIENCE about climate change and the ocean Writer describes the work of Victoria Fabry, an.

Related to snails, they swim by means of a pair of winglike gelatinous flaps and feed by entrapping even tinier marine creatures in a bubble of mucus. Many pteropod speciesâ€”there are nearly a hundred in allâ€”produce shells, apparently for protection; some of their predators, meanwhile, have evolved specialized tentacles that they employ much as diners use forks to spear escargot. Pteropods are first male, but as they grow older they become female. She is slight and soft-spoken, with wavy black hair and blue-green eyes. Fabry fell in love with the ocean as a teen-ager after visiting the Outer Banks, off North Carolina, and took up pteropods when she was in graduate school, in the early nineteen-eighties. At that point, most basic questions about the animals had yet to be answered, and, for her dissertation, Fabry decided to study their shell growth. Her plan was to raise pteropods in tanks, but she ran into trouble immediately. When disturbed, pteropods tend not to produce the mucus bubbles, and slowly starve. This, in turn, meant going out on just about any research ship that would have her. Fabry developed a simple, if brutal, protocol that could be completed at sea. She would catch some pteropods, either by trawling with a net or by scuba diving, and place them in one-litre bottles filled with seawater, to which she had added a small amount of radioactive calcium Forty-eight hours later, she would remove the pteropods from the bottles, dunk them in warm ethanol, and pull their bodies out with a pair of tweezers. Back on land, she would measure how much calcium 45 their shells had taken up during their two days of captivity. In the summer of , Fabry got a berth on a research vessel sailing from Honolulu to Kodiak Island. Late in the trip, near a spot in the Gulf of Alaska known as Station Papa, she came upon a profusion of Clio pyramidata, a half-inch-long pteropod with a shell the shape of an unfurled umbrella. In her enthusiasm, Fabry collected too many specimens; instead of putting two or three in a bottle, she had to cram in a dozen. The next day, she noticed that something had gone wrong. But I could see that, along the edge, they were becoming opaque, chalky. In the open sea, the CO2 they produce has no effect. By overcrowding her Cliopyramidata, Fabry had demonstrated that the organisms were highly sensitive to such changes. Instead of growing, their shells were dissolving. It stood to reason that other kinds of pteropodsâ€”and, indeed, perhaps any number of shell-building speciesâ€”were similarly vulnerable. This should have represented a major discovery, and a cause for alarm. But, as is so often the case with inadvertent breakthroughs, it went unremarked upon. No one on the boat, including Fabry, appreciated what the pteropods were telling them, because no one, at that point, could imagine the chemistry of an entire ocean changing. Since the start of the industrial revolution, humans have burned enough coal, oil, and natural gas to produce some two hundred and fifty billion metric tons of carbon. The concentration of CO2 in the air todayâ€”three hundred and eighty parts per millionâ€”is higher than it has been at any point in the past six hundred and fifty thousand years, and probably much longer. At the current rate of emissions growth, CO2 concentration will top five hundred parts per millionâ€”roughly double pre-industrial levelsâ€”by the middle of this century. But this is only half the story. Gases from the atmosphere get absorbed by the ocean and gases dissolved in the water are released into the atmosphere. When the two are in equilibrium, roughly the same quantities are being dissolved as are getting released. But change the composition of the atmosphere, as we have done, and the exchange becomes lopsided: In the nineteen-nineties, researchers from seven countries conducted nearly a hundred cruises, and collected more than seventy thousand seawater samples from different depths and locations. The analysis of these samples, which was completed in , showed that nearly half of all the carbon dioxide that humans have emitted since the start of the nineteenth century has been absorbed by the sea. Already, humans have pumped enough carbon into the oceansâ€”some hundred and twenty billion tonsâ€”to produce a. Since pH, like the Richter scale, is a logarithmic measure, a. This year alone, the seas will absorb an additional two billion tons of carbon, and next year it is expected that they will absorb another two billion tons. Every day, every American, in effect, adds forty pounds of carbon dioxide to the oceans. Because of the slow pace of deep-ocean circulation and the long life of carbon dioxide in the atmosphere, it is impossible to reverse the

acidification that has already taken place. Nor is it possible to prevent still more from occurring. Even if there were some way to halt the emission of CO2 tomorrow, the oceans would continue to take up carbon until they reached a new equilibrium with the air. The question that remains is how marine life will respond. Though oceanographers are just beginning to address the question, their discoveries, at this early stage, are disturbing. The complete article is here: A recent New Yorker has an article by Elizabeth Kolbert on the effects of carbon in the oceans. By now we could probably recite the consequences of carbon-loading the atmosphere, but I had never once heard or thought about how it might be affecting the sea. However, the aquatic carbon-loading is far from benign. The main consequence is a change in pH levels. You can follow any responses to this entry through the RSS 2. You can leave a response , or trackback from your own site.

Chapter 2 : The Wine-Dark Sea - Wikipedia

To ask other readers questions about The Darkening Sea, please sign up. Be the first to ask a question about The Darkening Sea En este libro Alexander Kent recupera la calidad de la mayorÃ-a de los libros de la serie Bolitho, pero se queda lejos de la maestrÃ-a de los primeros de la serie. As.

And if some god should strike me, out on the wine-dark sea, I will endure it, [9] Series chronology[edit] This novel references actual events with accurate historical detail, like all in this series. The events of The Yellow Admiral again match up with the historical years of the Napoleonic wars in sequence, as the first six novels did. Because of the demands of the Spanish government not to interfere with their colonies in South America, the Surprise sailed under Captain Pullings as a privateer, west to Peru, sailing until she met up with Aubrey in the Salibabu Passage in the South China Sea on the other side of the world. Aubrey sails again in the Surprise, sending the Nutmeg back to Batavia, where the Governor had given it to him The Nutmeg of Consolation. Surprise proceeds to Australia, picking up a friend and a stowaway. They sail around the Cape Horn, suffering damage from lightning, but meet with HMS Berenice, with supplies to repair her, and Aubrey and Maturin are ready to be home after the long voyage around the world. Kirkus Reviews said this novel is literate, leisurely, and as charming as the rest of the series. Sending Maturin to deal with the tottering Spanish vice regency in South America is a good choice, aboard the privateer Surprise. His narrative of the proto-revolution in Peru is sketchy at best. This deficiency is more than balanced by the intricate intimacy with which the reader comes to know the Surprise. In an enthusiastic review, they describe the writing: As usual, readers can revel in the symbiotic friendship of Jack and Stephen, who make for a marvelous duo, whether in their violin and cello duets or in their sharp dialogue. But this is no overstuffed epic. It is, if you can imagine such a thing, an intimate book that just happens to be 5, pages long. Here, in The Wine-Dark Sea, are the two old friends as they puzzle from the quarterdeck at a "strange-coloured" swirling sea: And now an umber light pervades the whole, like a Claude Lorrain run mad. One such is the group called Knipperdollings , a group who do not hold to the precepts of the first such group centuries earlier, but took the name to identify their beliefs apart from others. Martin gives Aubrey a full detailed history of the Knipperdolling beliefs then and on the ship. Maturin mentions the Viennese treatment for the pox venereal diseases , saying it relies on murias hydrargi corrosivus, which is a corrosive compound of mercury. In the long trek out of Peru, llamas are used, a domesticated breed, which took some time to stop spitting at Maturin. Aubrey mentions the Spanish Disturbance in Nootka Sound off Vancouver Island in as being a year with good effects in his life. After the loss in the American Revolution, the Royal Navy left midshipman and officers "on the beach". The Nootka crisis took some years to be resolved, on the question of which European power has rights to North and South American lands, if there is no settlement from that European power on the land. The port town at Callao is real, as is Lima , up higher in the mountains from Callao; in current times, the two are part of one urbanized area. Maturin and Eduardo viewed Lake Titicaca and its wildlife. Such high altitudes can strain breathing; the coca leaves that Maturin liked to chew, something he learned on his first visit to Peru, make it easier to stand the altitude. Maturin and Eduardo drank mate as they walked, which is a tea made from the coca leaf. Maturin came down from the mountains at Arica , a port now in Chile but then considered part of Peru. He made his way to the appointed meeting place at Valparaiso , a major port city in Chile.

Chapter 3 : A Sea Change () - IMDb

annals of science The darkening sea What carbon emissions are doing to the ocean. by elizabeTh kolberT d o d o ji N mi NG, "fr EE E l E m ENT xxxiii" ()/ l A.

Sven becomes enamored with pteropods, or sea butterflies, which evolved during the Cenozoic Era as the dinosaurs were becoming extinct. As the ocean water becomes more and more acidic, it is this calcium carbonate which is dissolving and inhibiting the calcification process which forms new shells and skeletons. This is driving species, from tiny pteropods and phytoplankton to massive corals, to extinction and undermining the food chain and ecosystem of the ocean. Ultimately as sea life dies, its impact will cascade beyond the oceans to land animals and eventually man. Ocean acidification is one of the many little known and dire side effects of our anthropogenic emissions of CO2 and other greenhouse gases and is due primarily to our burning fossil fuels for energy. While the most popularized consequence is global warming the gradual increase in the average worldwide temperature , the ever increasing levels of CO2 in the atmosphere are also being rapidly dissolved into our oceans, driving its pH down and increasing acidity. Ocean acidification is the dark cousin of Global Warming. A tipping point is a point of no return. The damage done becomes irreversible or actually begins positively feeding itself and accelerating. With near universal agreement, scientists say that we are burning fossil fuels at a rate that is fundamentally altering the ocean chemistry. CO2 emissions have dramatically increased our atmospheric CO2 which is driving excessive carbonic acid H2CO3 formation. This is the acid in the acidification. Acidification has increased and is currently increasing at an unprecedented rate. This is a mere blip in geologic time but it is longer than man as a species has existed on Earth. The Earth does not care: We should care because our survival is at stake. The film strongly makes the point that ocean acidification is a FACT and while it may be too late to reverse the situation, we need to buy as much time as possible to prepare alternative forms of energy and to learn to live on this planet without depleting it. We need to both inform and change direction NOW. Huseby invites us along on his own learning journey and we gather information with him and share in his letters, postcards and phone calls to his grandson, Elias. We accompany Huseby to Alaskan fishing villages to witness the devastation of the Exxon Valdez spill, to the barren glacial beaches of arctic Ny Alesund, Norway, to conferences and laboratories, capturing breathtaking oceanic cinematography. In asking his grandson what gift he would like brought back from Seattle, Elias asks for a dinosaur. Might this be another veiled reference to the last great age of dominance by the dinosaurs on our planet Earth and their fate of extinction? Miles is seemingly referring to the heavily politically motivated conservatative predictions made by the scientists at the Intergovernmental Panel on Climate Change IPCC. Huseby meets with conference participant oceanographer Dr. Richard Feely , of NOAA, the National Oceanic and Atmospheric Administration and learns that we now have equipment to precisely measure CO2 output, ocean acidification, and the changes in temperature, chemistry, ecosystems and biology that are happening simultaneously. Scientists have learned that our oceans are absorbing 22 million pounds of CO2 daily and they initially thought the solution was to enhance that absorption. There are now parts per million of CO2 in the air, the highest figure in , years. There will be a lot of extinctions. The science is clear and the delivery visually dynamic. Want to drive home the point to kids or kids at heart? Within three weeks, the acid had cracked the teeth. Imagine what is happening to our coral reefs or to delicate pteropod shells. It gets very scary when later in the film Huseby gets in a row boat with a long time friend in Norway and they row themselves out to the melting glaciers where they and we can see and hear the impact of the melt. These are two other ocean-related consequences threatening our survival along with ocean acidification that emerge in this one shot in the film. We have only enough fossil fuel to last two centuries, which seems significant to individuals now living, but to use this fuel, we are changing the ocean for millions of years. We have no idea what it will do to higher life forms but we will know in a few decades, so just hang on. He takes us to Sostra Island, West of Bergen, to see these giant wind turbines and talks with two men who dream of developing a large wind park that will completely power all of Norway. This is a glimpse of hope at what so far has been a dire journey through just this one acidification consequence of our anthropogenic emissions of CO2. Back in the US, Huseby meets

with Miyoko Sakashita , an environmental lawyer at the Center for Biological Diversity, who believes it is not too late to solve the problem. In the absence of much-needed national CO2 emissions regulations, the center is focused on legal and policy strategies that various states can enact. It has initiated a lawsuit that has convinced the EPA to look into the possible application of the Clean Water Act to tighten its water criteria for ocean acidity. Once these water bodies are listed, states are required to take action to limit the pollutants causing the problem. The Endangered Species Act is another very strong law that the center is working with to protect endangered ocean species. The efforts of coastal states are minusculeâ€¦coastal bodies are but a drop in the bucketâ€¦the larger seas they connect to and the lack of US support for the Kyoto Protocol which attempts to limit greenhouse gases. Accolades to Google, but it is one of the most profitable companies of all times; what can smaller companies who currently cannot afford to implement solar solutions do to move towards energy independence? What additional incentives should be offered them? Van Dyck, a Sr. Products focused around reducing carbon output as means of adding value that can be exported should be the focus of entrepreneurs and our nation. The point, not expressed strongly enough, is that we as a nation need to make this our urgent priority. Currently, Germany, Japan and Spain have larger markets for solar energy than the US but we have a huge solar opportunity. By , these plants could supply 69 percent of the U. That investment is substantial, but the payoff is even greater. Solar plants consume little or no fuel, saving billions of dollars year after year. The infrastructure would displace large coal-fired power plants and more large natural gas plants and all the fuels they consume. For roughly one half our current military budget, this plan would effectively eliminate all imported oil, dramatically reducing U. Are banks more important than our oceans and potentially life on Earth? Over 50, times the total energy usage of the entire world is simply wasted every day as sunlight falls warmly on the Earth while our oceans slowly die. San Francisco International Film Festival: Sat April 25, 3: I am especially attached to SFIFF because the programming is wonderfully diverse offering narrative features, feature documentaries, works from new directors, and shorts from all over the world that can loosely be divided into over 20 causes- the arts, environment, health, family issues, world culture, war, youth, and Cinema by the Bay locals. Most of these films sell out, so buy your tickets in advance. Here are my must-see flics, biased by my heavy interest in global politics, environmental concerns and penetrating storytelling. I will be posting full reviews of several of these films in coming days. The urgent and accessible message delivered by Huseby is that we have reached a turning point: CO2 is acidifying our oceans and this is going to dramatically alter life on our plant for coming generations. Ocean acidification is the flip side of global warming and if you have children, grandchildren or any investment in life as we know it continuing on this planet, this is a must-see film. This riveting documentary sheds light on this important permanent international tribunal that has been established to try individuals for war crimes, crimes against humanity and genocide regardless of their power or influence and to punish them. The film will inspire and informâ€¦no matter how painful, coming to terms with painful history is the best way for our civilization to heal and move forward. Sun May 3, 5: So far, thirty-one states have voted to make English their official language and even in liberal Palo Alto, a Mandarin language immersion program was viewed as extremely controversial and nearly stopped. The children enter immersion programs for different reasons and while they grow impressively at ease with the portal language offers, becoming impressive global citizens and much better students, their parents argue. Sun April 26, 3: Filmmaker Heddy Honigmann who received the SFIFF Persistence of Vision Award was born in Peru and returns to this forsaken country to explore its dispossessed citizens, capturing them in their victory as well as despair but never ever defeat. The wisdom and sage humor in this film directed against its politicians and life itself makes it well worth seeing. Sat April 25, 4: He takes her advice but her replacement turns out to be another older professional woman rather than the gorgeous creative model-type that Anne-Marie imagined he should be with. What starts off as mild curiosity about the other woman morphs into out of control jealousy and a meltdown. Friday May 1, 4: Each year the festival asks a culturally prominent public figure to address pressing issues in contemporary cinema. Mary Ellen Mark, voted by the readers of American Photo as the most influential woman photographer of all time, will deliver the State of Cinema address on Sunday May 3, 3 pm, at the Sundance Kabuki Theatres, giving a tour of her film-set images and discussing the legendary figures in her famous frames as well.

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Chapter 4 : The Darkening Sea Â« ARThound

The Darkening Sea Published 18 November Media coverage Leave a Comment Elizabeth Kolbert reports on the impact of carbon-dioxide emissions on the ocean, which is resulting in "ocean acidification" and threatening the entire marine ecosystem ("The Darkening Sea," p. 66).

Chapter 5 : The Darkening Sea (Richard Bolitho, #22) by Alexander Kent

The Darkening Sea has 7 ratings and 0 reviews. From the clash of mighty battleships at Jutland in to the cold splendor of the present-day Arctic, 'T.

Chapter 6 : The Darkening Sea (Richard Bolitho, book 20) by Alexander Kent

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Chapter 7 : The Darkening Sea - Alexander Kent - Google Books

Pirates of the Caribbean: Dead Men Tell No TalesChapter 1 //St. Martins Bank//The streets were full of chatter and movement from the occupants of the port. Children ran through the streets, squealing and shouting, whilst mothers looked around the stalls.

Chapter 8 : The Darkening Sea (Audiobook) by Alexander Kent | www.nxgvision.com

In this 21st Richard Bolitho novel, Kent's popular naval hero returns to England after the capture of Martinique and finds a brief respite in the arms of his mistress, Lady Catherine Somervell.

Chapter 9 : The Darkening Sea by Richard Woodman

Despatched on a secret mission, the company of a gun frigate must face the hazards of conspiracy, treason, and piracy. And recently appointed third lieutentant Richard Bolitho must learn to accept his new responsibilities as a King's officer.