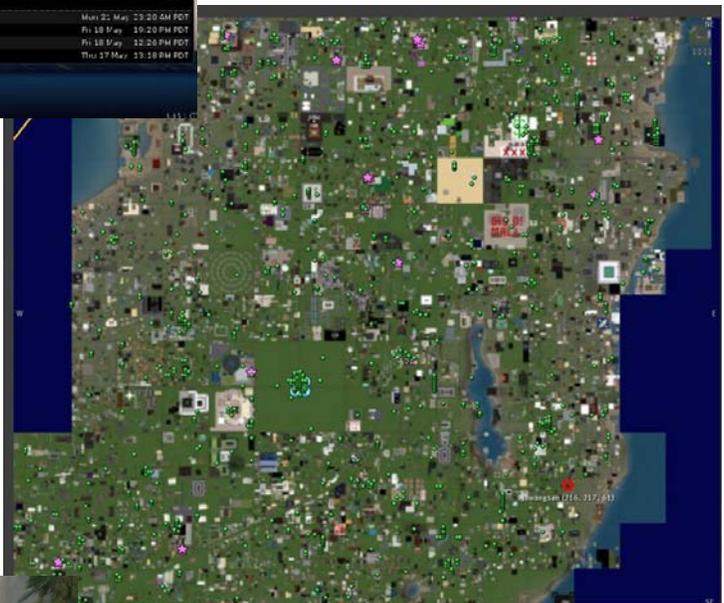


Second Life

Options and Opportunities for EPA in a Virtual World



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Introduction

Second Life is an online virtual world. First released by Linden Labs in 2003, Second Life is a metaverse filled with opportunities for networking, teaching, experimenting, and even making money.¹ To some it may seem like just another electronic game, but in this world people create avatars—digital representations of themselves, who they would like to be, or just about anything else—and do what they would do in the real world and far more. Avatars can even fly in Second Life! Residents of Second Life purchase products, meet new people, visit various facilities, and exchange ideas. It is free to download and join, but there are plenty of opportunities for residents to spend money acquiring items both in-game and in real life. In fact, an entire economy exists in the game with residents spending “Lindens”—Lindens and dollars can be exchanged through the Second Life bank Lindex.² As shown in the box below, Second Life use is widespread and growing!



Second Life Statistics (through April 2007)

- 5,973,301 registered users
- US \$7,190,159 exchanged
- >20% growth/month
- Active users spend about 40 hours/month in game
- 579.42 km² of land
- Exchange rate: L\$268/US\$1
- Age of avatars:
 - 18-24: 26%
 - 25-34: 38%
 - 35-44: 21%
- Gender of avatars:
 - Male: 57%
 - Female: 43%

Sources: <http://blog.secondlife.com/2007/05/10/april-2007-key-metrics-released/> ;
<http://www.investors.com/editorial/IBDArticles.asp?artsec=17&issue=20070221>

Companies and agencies such as IBM, the National Oceanic and Atmospheric Administration, and the Centers for Disease Control and Prevention have facilities within Second Life ranging from online stores to information centers to interactive demonstrations. This analysis will explore what a selection of agencies and companies are doing in-game and what is possible in Second Life. I also offer my impressions of these activities as an avatar in Second Life. Let's take a look!

¹ Parker, Sam (June 23, 2003). [Second Life goes live](http://videogames.yahoo.com/newsarticle?eid=434909&page=0). Yahoo!. Retrieved 05-16-2007.
<<http://videogames.yahoo.com/newsarticle?eid=434909&page=0>>

² “Lindex Market Data,” <http://secondlife.com/whatis/economy-market.php>. Retrieved 05-21-2007.

Review of Agency and Company Activities in Second Life

National Oceanic and Atmospheric Administration (NOAA):

NOAA's simulation is called Meteroa. On this island sim, avatars in Second Life can find fully interactive educational demonstrations about the ocean and weather. Examples include a sea life submarine ride and two different tsunami demonstrations. Other features include a demonstration of a real-time weather map, an airplane ride into a hurricane, a weather balloon ride, and a melting glacier demonstration.

View a video of a Tsunami demo at: <http://media.putfile.com/Tsunami-45>

The weather map on NOAA's Second Life island works by way of dozens of scripted reporting stations dotted all over a map of the United States. (See Fig. 1) These stations retrieve METAR³ data from NOAA every eight minutes, which they then decode and render into models of the appropriate weather phenomenon for the area. All sorts of cloud cover and precipitation models are available as well as special weather conditions such as thunderstorms and tornadoes. Temperature is represented by warmer and cooler shades of color. This 3D composite give visitors a visceral feel for the weather around them.

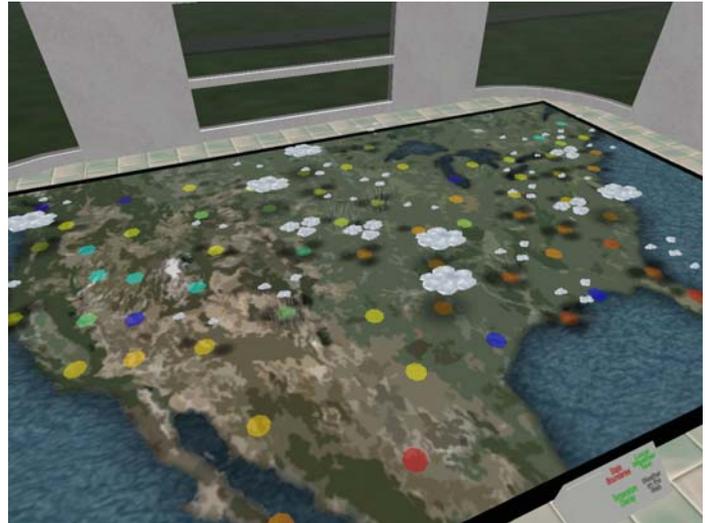


Figure 1: NOAA Weather System Map in Second Life.

Take a video tour of NOAA's Island at: <http://www.youtube.com/watch?v=is8YX32GAYQ>

SLurl⁴ or teleport to a location in Second Life: <http://slurl.com/secondlife/Meteora/177/161/27>

NOAA's facility is easily one of the more interactive and interesting in Second Life. While I did not run into any other residents during my visits, there have been numerous positive reports and reviews of Meteroa. The exhibits are clear in their message, easy to navigate, and highly informative, making repeat visits to the island sim very likely.

³ METAR is a format for reporting weather information. METAR means "aviation routine weather report" and is predominantly used by pilots in fulfillment of a part of a pre-flight weather briefing.

⁴ "SLurl" stands for Second Life URL. If you have Second Life downloaded and you are a registered resident, clicking a slurl will provide you with the option to teleport your avatar to that particular location.

Centers for Disease Control and Prevention (CDC):

John Anderton, Associate Director for Communications, spearheaded CDC's effort to establish a presence in Second Life. He is CDC's "go-to guy" for their health communications "Special Forces" missions, having been detailed to work on public health crises like the CDC's response to the anthrax scares and the flu vaccine shortage. He is charged with exploring how social media can be used to promote public health.

CDC holds health fairs within Second Life, inviting residents to come to the CDC facility to ask questions, discuss relevant topics, and learn about important health issues. (See Fig. 2) Events drive interest among residents, as demonstrated by the high turn-outs at fashion shows and concerts within Second Life. These events present both entertainment and information dissemination opportunities. As such, Anderton chose to model CDC events within Second Life after community health fairs rather than big press conferences. CDC plans to hold press conferences in the future when it expands its presence within Second Life.



Figure 2: Center for Disease Control and Prevention within Second Life.

Anderton recommends that other agencies and organizations establish a presence within Second Life immediately if they are at all interested in doing so. He has not encountered any resistance to exploring Second Life as a virtual office; rather, he has been encouraged by a chorus of support.⁵

SLurl or teleport to a location in Second Life: <http://slurl.com/secondlife/Juwangsan/216/217/61>

The CDC facility within Second Life contains useful information, but is not presented in any manner that is particularly inspiring or interactive. (See Fig. 2) Visitors can walk through the facility and look at what are essentially web pages pasted up onto the walls of the room. I was not able to attend a health fair, but this facility would likely be much more useful as a meeting place than a stand-alone attraction. It is informative, but not very innovative.

⁵ <http://www.social-marketing.com/blog/2006/11/cdcs-second-life.html>

IBM:

IBM has been researching and experimenting with virtual worlds to understand, among other things, the importance of visual imagery to convey information and a vast range of other aspects of human interaction with visual and virtual spaces. IBM believes virtual worlds and gaming will have a huge impact on IT, business, society and our personal lives in the very near future.

IBM is looking into what it would be like if corporate planners were able to experiment with models of their suppliers, customers, and employees in a virtual world. Such virtual business worlds could go far beyond today's simulations. They could simulate entire ecosystems, each one evolving as streams of data flow in from the real world.



Figure 3: "The future of computer games," IBM facility.



Figure 4: IBM virtual amphitheater.

IBM is already holding meetings and conducting development inside virtual worlds with about 20 major clients, including telecommunications and aerospace firms, a petroleum company that wants to use virtual worlds for training and "a major grocer in the UK" that wants to build a virtual store that will allow consumers to buy real-world groceries online.

So far in Second Life, IBM has set up a simulation of the Wimbledon tennis tournament, using data that tracks the position of the ball to re-enact points several seconds after they happen. It has also held virtual events such as an IBM alumni reunion.

Slurl or teleport to a location in Second Life: <http://slurl.com/secondlife/IBM%207/99/132/24/>

IBM has set up a fairly nice facility within Second Life. Its launch brought a lot of attention, but like most of these destinations within Second Life, I did not see any other avatars during my visit. There is some information about computer game initiatives that might prove to be interesting (see Fig. 3), along with some presentations on innovation. The presentation of information in IBM's space is far more inviting than at the CDC facility. The IBM facility feels much more like a destination than a three-dimensional version of a website. (See Fig. 4)

Dell:

Dell Island is much more a store-front than an information center. (See Fig. 5) Visitors to Dell Island will be able to examine Dell products in an interactive, three-dimensional way. They can rotate, change colors, and look at the inner components of a Dell PC. (See Fig. 6) The Second Life stores are also linked to the Dell.com e-commerce system. Residents can build and order a computer in Second Life and have it delivered to them in real life. The first in-world resident to order their PC from Dell will get it for free.



Figure 5: Dell Island courtyard.



Figure 6: "Drawing boards" on Dell Island.

Dell received heavy criticism for an in-game promotion of its *Plant a Tree for Me* environmental program. Dell's real world promotion solicits donations from PC buyers to plant trees to offset the carbon produced during the manufacture and use of the system. In Second Life, Dell gave away virtual trees which users could plant on private land and determine the rate at which they grew. However, the virtual tree planting program does nothing to reduce actual carbon emissions. Because the Second Life tree is effectively a software application that requires computing power to grow and show up in the virtual world, critics argue the in-game program is likely *increasing* Dell's carbon emissions. Dell's program

illustrates the importance of adequate analysis of forays into Second Life so as to avoid seemingly meaningless involvement in the game.⁶

⁶ <http://www.vnunet.com/vnunet/news/2188383/dell-virtual-earth-day>

One Climate Island:

One Climate Island is touted as “another kind of solution space in the virtual world of Second Life” where residents can travel carbon-free to meet other people working on solutions to climate change. It is currently under construction with areas being built collaboratively with help from a number of organizations.

View [Youtube](#) video introduction:

<http://www.youtube.com/watch?v=njKRjCLOYkI&eurl=http%3A%2F%2Fclimate%2Eone%2Fworldblogs%2Eenet%2Fgetting%2Dstarted%2Fisland>

One Climate Island is a project of the larger “One Climate” network:

<http://climate.oneworldblogs.net/>.

Slurl or teleport to a location in Second Life: <http://slurl.com/secondlife/OneClimate/128/128/26>

There is not a lot of activity on One Climate Island. I did not find anything truly inspiring or terribly interesting like the NOAA exhibit. One Climate Island is definitely more a meeting space than a learning center. However, this island appears to have room for educational demonstrations (see Fig. 7), which would certainly be appropriate, but they need to be easy to interact with and clear in their message.



Figure 7: Wind energy simulation on One Climate Island.

What could EPA do in Second Life?

Based on the review of Second Life activities by other government agencies and companies, below are suggestions for ways that EPA could productively engage in this growing virtual world.

- Establish a minimal presence like that of CDC, providing information about EPA and its programs.
- Hold regular events in an EPA facility in Second Life. These events could mirror actual events in the real world or be dedicated events in the virtual world.
- Use Second Life for brainstorming meetings between headquarters and regional offices or between EPA's research labs.
- Set up an interactive island with models and simulations (see Fig. 8)
- Use Second Life to study environmental management approaches such as tax credits, recycling programs, labeling, etc.
- Set up an in-game carbon offset program for residents to offset their SL activities and real-life activities.

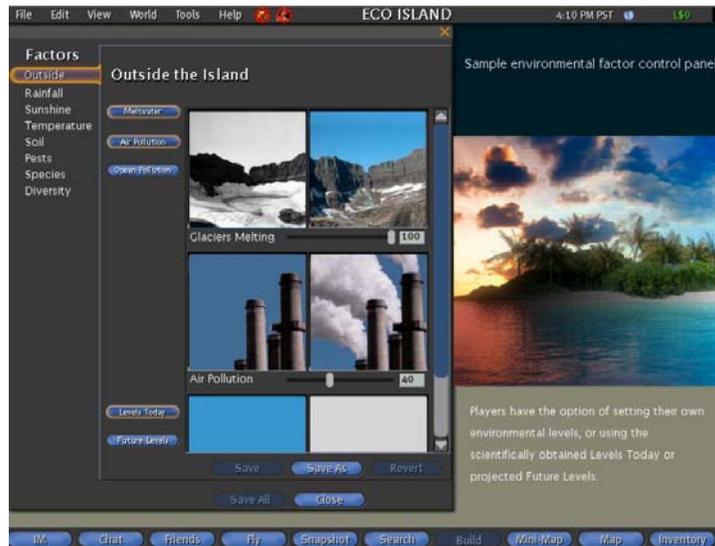


Figure 8: Eco Island environmental simulation mock-up.

How much will Second Life cost?

Island price: US\$838

Monthly maintenance: US\$148

Building costs: varied; US\$5-\$100

Total cost for island, annual maintenance and one building ≈ US\$2,700

Sources: <http://secondlife.com/community/land-islands.php>;

<http://www.khyri.com/livingstonproperties/commission.php>

Concluding Thoughts

In sum, my explorations in Second Life have shown that there is certainly room in this “metaverse” for educational facilities. However, they can easily be constructed and presented in uninspiring ways that will lose the attention of visitors almost immediately. Facilities like those of CDC will be useful only for those Second Life residents interested in seeking out information from CDC in particular. The NOAA facility, on the other hand, can be interesting to residents who happen to wander into Meteroa on a whim. It offers interactive and engaging demonstrations that do not require an interest in any one topic. If an agency or company was to set up a facility within Second Life, it would be most effective to mimic real-world facilities rather than mock-ups of websites like the CDC facility. Residents should be given plenty of room to maneuver—close quarters can be difficult to manage for those who have not completely mastered movement within Second Life.

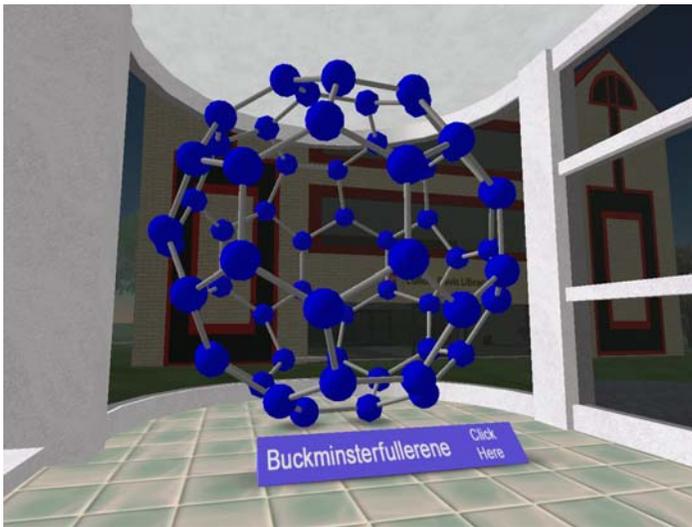


Figure 9: Buckminsterfullerene model in the Second Life Science Center.

A myriad of environmental activities could be applied to Second Life. This virtual world provides a wealth of opportunities to set up interactive and informative demonstrations not possible in the confines of the real world. (See Fig. 9 for example.) With creative minds put to the task, people can be informed of environmental problems, debates, and solutions in engaging (and sometimes fun) ways.

Food for thought:

Nicholas Carr finds that one Second Life avatar consumes more electricity than the average Brazilian.

http://www.rougntype.com/archives/2006/12/avatars_consume.php

Tony Walsh questions the sustainability of Second Life, wondering whether or not Second Life is an appropriate vehicle for Earth Day events and other ecological activities.

http://www.secretlair.com/index.php?/clickableculture/entry/open_letter_to_the_second_life_environmental_council/