

Zoos & Aquariums for 350

Zoo and Aquarium
Climate Change Movement Handbook

Dear Colleague,

350.org is a global movement dedicated to bringing atmospheric levels of CO₂ back to 350 ppm and improving life on a changed planet. We believe that this effort should be expanded to include the zoo and aquarium community and we are inviting you to help lead the way.

Zoos and the 350.org movement make a perfect partnership. Zoos' strong local ties to their communities and legislators give them a unique position that no other conservation organization has. By joining the movement, greening your institution and your portfolio, you are making an investment in a livable future for our children and for wildlife. What could be more closely aligned with the mission of zoos and aquariums than to conserve nature and teach children about its wonder?

We feel that now is the time for us to join the 350 movement which is gaining momentum across the globe. Together we have the opportunity to take a leadership role in action to rescue the planet from destruction; the chance to tackle the source of the problem that, if left unaddressed, will continue to undermine all of our conservation efforts.

I hope that once you have reviewed this handbook, you will be inspired to join the Zoos & Aquariums for 350 Climate Change Movement. Together the true impact of this ambitious commitment by our community will be fully recognized.

Onnie Byers

Chair, IUCN SSC Conservation Breeding Specialist Group



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"We need to create a movement with the goal that no government can ignore the danger of climate change and all governments are taking the essential actions to address it."

- CBSG Climate Change Action Planning Working Group

Introduction

THE STAKES

It's time to write a new chapter in the fight against climate change.

Scientific evidence increasingly shows that climate change will become a primary driver of species extinction in the coming century.¹ In 2013, the amount of carbon in the atmosphere crept toward 400 ppm. Ice melts, seas rise, oceans acidify, and temperatures increase. The International Union for Conservation of Nature reports that 70-80% of birds, amphibians and corals that are already threatened are also climate change-susceptible.²

Scientists tell us that in order to keep global temperatures from rising above 2° Celcius—the target widely adopted by governments worldwide as the threshold to prevent dangerous human-caused interference with the climate—the world needs to drastically limit greenhouse gas emissions.³

Many zoos and aquariums have implemented energy conservation programs to green their infrastructure, developed marketing strategies and climate-related education programs, and encouraged their visitors to adopt good habits to help the planet. These institutions recognize that it is essential for them to align their operational practices with their mission statements.

¹ Species Susceptibility to Climate Change Impacts. IUCN. 2008.

² Foden, et al. "Identifying the World's Most Climate Change Vulnerable Species". PLOSOne. 2013.

³ Center for Biological Diversity. http://www.biologicaldiversity.org/programs/climate_law_institute/350_or_bust/

Despite these efforts and those of countless other organizations and individuals around the globe, it has become clear that without a social movement, individual and institutional measures will not be enough. As long as the threat of fossil fuel-induced carbon overload hovers over our heads, stopping climate change with individual and even isolated institutional actions is like trying to keep a flood at bay by sucking water through a straw. We can't keep up.

Government policies are necessary to slow the rampant extraction and burning of fossil fuels and to move in the direction of alternative energy solutions. But so far government action has been slow, thanks in part to the influence of fossil fuel companies, who stand to profit from denying climate change and continuing business as usual. The lack of participation from high-emitting nations like the US and China has foiled the success of international efforts and agreements. This calls for weaving together our individual actions to form a movement that will reverberate to the highest levels of government.

Many zoo mission statements focus on conservation and education. These missions center on two groups—endangered species and children—that stand to suffer the most from harmful climate change effects.¹ Their knowledge of what is at hand calls for zoos and aquariums to not only communicate about climate change in honest terms to the public, but to harness the energy and resources of their community to pursue creative solutions.

¹ "Children will Bear Brunt of Climate Change Impact, New Study Says." *The Guardian*. 22 Sept 2013.

THE NUMBERS

A 2012 Rolling Stone article by environmental writer and founder of 350.org Bill McKibben simplified the complex science of climate change, with a focus on the danger of burning fossil fuels, into three numbers:¹

2°C: The maximum amount of global warming that can occur without causing runaway climate change. Almost every country in the world has agreed to this and has committed to not exceeding this increase in global temperature.

565 gigatons: The amount of carbon scientists say we can burn and keep warming below 2°C. At current rates, we'll burn this amount of carbon in 16 years.

2795 gigatons: The amount of carbon fossil fuel companies have in their reserves. That's five times more than the amount of carbon we can burn before surpassing the 2°C limit.

Another number to note is **350**: in order to maintain a planet similar to the one we've adapted to, levels of CO₂ in the atmosphere must be reduced to 350 ppm. Scientists say that this will be difficult, but not impossible, and the only way to achieve it is to leave carbon in the ground and keep it out of the air.²

Efforts to reach net-zero emissions (no longer emitting more carbon in the atmosphere) must be realized by 2050 to reach 350 ppm in 2100. This timeframe

¹ McKibben. "Global Warming's Terrifying New Math." *Rolling Stone*. 19 July 2012.

² Hansen, et al. "Target atmospheric CO₂: Where should humanity aim?" *Nature*. 15 Oct 2008.

provides the best chance of keeping warming under the 2°C mark.¹ The next few years are critical for the feasibility of reaching this target, and as of now we still have a chance.

THE MOVEMENT

Around the world, individuals and communities are coming together to send a strong message to the world's leaders that we need them to enact policies that help to bring climate change under control. A number of powerful campaigns are gaining momentum and demanding progress toward clean energy innovation and government action leading to climate change mitigation. These diverse, participatory movements have a key message—that the world's governments need to act to get and keep atmospheric levels of CO₂ back to a "safe" 350ppm.

THE OPPORTUNITY

This movement provides proactive solutions in which the species conservation community can play a strong part. This role is wide open to be filled by zoos and aquariums.

According to an article in *Scientific American*, "A new national survey suggests that 82 percent of zoo visitors believe climate change is happening compared with just 64 percent of the general public."² Zoos and aquariums can and do play a role in educating the public about climate change, and the urgency of this threat calls for accelerated, committed action by all institutions and individuals.

¹ Center for Biological Diversity. http://www.biologicaldiversity.org/programs/climate_law_institute/350_or_bust/pdfs/Not_Just_a_Number-v3.pdf

² "Can Zoos Play a Role in Climate Change Education?" *Scientific American*. 1 Dec 2011.

Join the Movement

PURSUE DIVESTMENT

Zoos impact attitudes of their visitors by artfully sharing a passion for species and conservation through well-designed exhibits and education programs. Species in zoos and aquariums impart a spirit of wonder to future generations who will someday become conservationists, educators, scientists, politicians, authors, and advocates for these same species. Because of this, zoos play a unique role in protecting the animals in their collections, as well as those species' wild counterparts and habitats, to ensure that the species can thrive and future generations can appreciate biodiversity the way we do today.

Knowing the devastating impacts of global climate change on species places a special burden on zoos, aquariums, and other conservation organizations to act. Many already are by greening their business practices, reducing carbon emissions, contributing to research on climate change, and educating visitors. These continue to be important ways to contribute to finding a solution. In addition to these efforts, we also need to be aware of other opportunities that provide us a way to contribute on a grander scale, especially if they unite us with others who are working to address the enormous problem of climate change.

Now is our chance to be leaders in transforming a flawed system into one that perpetuates hope instead of harm. We can create change, but only if we work together.

Let's get started.



After zoos and aquariums make the decision to divest, the first step is to freeze any new investment in fossil fuel companies. Next, create a plan for divesting from direct ownership and any commingled funds that include fossil fuel public equities and corporate bonds within five years. Five years should allow enough time to unravel some of the more complex institutional investments.

→ Why Divestment?

The three numbers defined above (2°C , 565 gigatons, and 2795 gigatons) highlight the key role of the fossil fuel industry in the climate crisis. Fossil fuel companies work hard to ensure that they can continue to extract more fuel and continue to see large profits and tax breaks. They lobby governments and fund politicians who cast doubt on the truth of climate science and the need to drastically reduce global carbon emissions.¹ These companies need to leave their reserves in the ground, but extracting those reserves is a key part of their business plan, so we know they won't do so voluntarily.

Divestment draws attention to the fact that in order to return levels of atmospheric CO_2 to safe levels, many of the known carbon reserves held by these companies

¹ "Dealing in Doubt." Greenpeace USA. 2013.

cannot be used. It asks governments to enact policies that reflect this reality and causes financial markets to see the risk associated with fossil fuel investments. Divestment assures zoo visitors and donors that the money they donate or spend at the zoo will be invested in places that support a collective effort to develop solutions to this universal challenge. It provides opportunities for zoos to invest in industries that reflect their conservation mission.

The consensus indicated by divestment tells governments and the financial sector that zoos and aquariums—along with universities, cities, businesses, and religious institutions—are serious about climate change and the role of the fossil fuel business plan in perpetuating it.

History shows that the attention generated by divestment can change the course of events and instigate government action. There have been a handful of successful divestment campaigns in recent history, including Darfur and tobacco, but the largest

and most impactful one focused on the issue of South African apartheid. Divestment not only applied direct economic pressure, but also helped reveal the immorality of apartheid, galvanizing a movement of concerned citizens around the world.

By the mid-1980s, 155 campuses had divested from companies doing business in South Africa. Twenty-six state governments, 22 counties, and 90 cities took their money from multinationals that did business in the country. The South African divestment campaign helped end apartheid and usher in an era of democracy

“Zoos and aquariums are critical places for the fossil fuel divestment movement to take hold. As institutions dedicated to conservation and biodiversity, they have an incredible opportunity to educate the world on the climate crisis.”

-Phil Aroneanu, 350.org

and equality.¹ Archbishop Desmond Tutu stated that the movement to end apartheid “would not have succeeded without the help of ... the divestment movement of the 1980s.²”

A similar strategy can help us even the playing field between “business as usual” fossil fuel overuse and making the big changes required by the scope of the problem. Just as apartheid divestment originated from a deeply moral issue, so the heart of the fossil fuel divestment movement springs from a moral standpoint: it is wrong to profit from activities that lead to destruction of the planet, its people, and its wildlife.

→ Our Partners

The fossil fuel divestment movement began in universities. Students from over 400 colleges in the US, Canada, India, and Europe have started campaigns to divest their schools' endowments completely from fossil fuels. Nine universities have committed to divestment, and many more are engaging in discussion about the possibility of divesting.

Now this movement has spread beyond campuses. Twenty-two US cities including San Francisco, CA, Seattle, WA, and Portland, OR have committed to divesting. Businesses, foundations, and religious institutions in Europe, Australia, and the US have caught on to the importance of their investment portfolios reflecting their position on the environment.

Divestment is also catching the financial sector's attention. Numerous reports and articles from financial investors express the increasing volatility of fossil fuel profits.

Both HSBC (one of the largest banking and financial services organizations in the

1 <http://gofossilfree.org/colleges-universities/toolkit/>

2 McKibben. “Global Warming’s Terrifying New Math.” *Rolling Stone*. 19 July 2012.

world) and Standard & Poor's (worldwide leader of financial market intelligence) have released reports about the growing risk associated with fossil fuel investments.¹² MSCI Inc., a mainstream investment analytics firm, released a report saying that the #1 trend to watch in 2014 is fossil fuel divestment.³

FAQ

What exactly does divestment mean?

Divestment is the opposite of investment. It means removing assets from specific financial products or industries. In this case, we are asking zoos and aquariums to immediately freeze any new investment in fossil fuel companies, and develop a plan to divest from direct ownership and any commingled funds that include fossil fuel public equities and corporate bonds within five years. The complexity of these investments requires time and dedication to unravel, but the sooner we commit to move forward, the better.

Why fossil fuel companies?

By focusing on fossil fuel companies instead of other types of socially irresponsible investments, we join an international movement that is gaining momentum, generating conversation, and drawing needed attention to the true issue – the need for national and international policy change.

What message do we want to send to fossil fuel companies?

200 publicly-traded and government owned companies hold the vast majority of

1 "Oil and Carbon Revisited." HSBC. 25 January 2013

2 "What a Carbon Constrained Future Could Mean for Oil Companies' Credit-Worthiness." Standard and Poor's. 1 March 2013.

3 "2014 Trends to Watch." MSCI. December 2013.

the world's proven coal, oil and gas reserves. Those are the companies we're asking institutions to divest from. The messages sent to these 200 companies are simple, because they reflect the stark truth of climate science:

- They need immediately to stop exploring for new hydrocarbons.
- They need to stop lobbying to preserve their special breaks.
- Most importantly, they need to pledge to keep 80% of their current reserves underground forever.

How will all of this actually result in any change?

Our intention is not to bankrupt fossil fuel companies, but to remove their social license by drawing attention to how their business plan guarantees runaway climate change. Divestment has gotten media attention and sparked discussion. Leveraging zoos and aquariums, universities, and other institutions creates a consensus within the investment world and the public at large. Publicly divesting from fossil fuels will deliver a clear message to government bodies that the public wants policies that will keep warming below 2°C. Those policies would place limits on the amount of carbon fossil fuel companies can extract and burn for free.

Publicly divesting from fossil fuels will deliver a clear message to government bodies that the public wants policies that help keep warming below 2°C.

Shouldn't zoos and aquariums stay out of politics?

Divestment can be an uncomfortable step for a zoo or aquarium to take, but these are not ordinary times. Scientists have made it clear that we're running out of time to address the climate crisis. As institutions dedicated to conserving species, zoos have a special responsibility to help protect the future of our planet. It makes no

moral or practical sense to pay for the conservation of a species or the education of a generation of children by investing in companies whose business plan guarantees that they will not have a recognizable planet to live on.

Companies like ExxonMobil, Shell and BP have billions of dollars. How can the divestment of a few institutions make an impact?

The largest zoo, aquarium, and zoo and aquarium association endowments together hold nearly \$1 billion. When combined with endowments from colleges and universities (which hold over \$400 billion in their endowments), state pension funds, and investments of religious institutions, we're well on our way to making a significant statement. The power of our actions comes from the collective nature of the movement.

Divestment shakes up the financial markets and shows the big finance firms that fossil fuels are risky investments. It's already working: HSBC, Standard and Poor's, Sweden's Storebrand Group, and others have released reports about the growing financial risks associated with fossil fuel investment.

Is it even possible for my institution to divest from fossil fuels?

Even though the first answer you receive from your board and fund manager might be "no," the answer is yes. Boards of trustees can tell their money managers to develop responsible investment strategies that exclude direct investments in fossil fuel corporations and funds that include fossil fuels in their portfolio (it's called "screening"). So don't take no for an answer. As people realize the threat of the climate crisis and the role of the fossil fuel business model in perpetrating this crisis, more options for fossil-free funds are becoming available.

Can we still make a reasonable return without investing in fossil fuel companies?

While it's true that fossil fuel companies are extremely profitable (the top five oil

companies, last year, made \$137 billion in profit—that's \$375 million per day), they're also very risky investments.¹ Coal, oil and gas companies' business models rest on emitting five times more carbon into the atmosphere than civilization can handle, which makes their share price five times higher than it should be in reality.

As the reality of climate change sets in, governments are facing more pressure to create policies to drastically reduce carbon emissions to stay below a 2°C temperature rise. These policies would make fossil fuel reserves "unburnable," and make fossil fuel investments stranded assets.²

Divestment not only lowers financial exposure to companies with stranded carbon assets, but also yields profitable returns.³

"Currently financial markets have an unlimited capacity to treat fossil fuel reserves as assets. As governments move to control carbon emissions, this market failure is creating systemic risks for institutional investors, notably the threat of fossil fuel assets becoming stranded as the shift to a low-carbon economy accelerates."

-Carbon Tracker Initiative

¹ Sustainable Extraction? An Analysis of SEC Disclosure by Major Oil & Gas Companies on Climate Risk and Deepwater Drilling Risk. CERES.

² "Unburnable Carbon 2013." Carbon Tracker Initiative. 2013.

³ "2014 Trends to Watch." MSCI. December 2013.

Six Steps to Divestment

1) Find out where your money is. Talk to your foundation, board, or financial planner to find out where your money is invested. Even zoos and aquariums with ethical investment policies are likely invested in one or more of the top 200 fossil fuel companies (<http://gofossilfree.org/companies/>).

2) Commit to pursuing divestment. It's both that simple, and that complicated. A commitment to divestment does not mean that you know all the answers or can predict the outcome. It means that your institution will begin taking necessary steps to move in this direction. Remember, it doesn't have to happen overnight—the goal is full divestiture in five years.

Ready to get started? Join the Movement at <http://www.cbsg.org/content/join-movement> to indicate your intention to pursue divestment for your institution.

3) Research responsible investment alternatives. Investment products that exclude fossil fuel industries are available to investors and, just like for any investment product, there is help available for identifying fossil fuel free funds. For a good place to start, visit <http://www.greenamerica.org/fossilfree/>, which has links to fossil free mutual funds, green asset management firms, and financial planners.

No obvious fossil free reinvestment options for a specific financial product? Find out who else in your community might be divesting, whether it be a government-funded university, city government, or another zoo or aquarium and consider joining forces.

4) Meet with your financial planner. Once armed with a sufficient amount of information, meet with your financial planner if you have one. Most likely, they will be familiar with some type of socially responsible investing (SRI) and can help you

identify fossil fuel free products. Remember that this is a new movement and your advisor may take some convincing. Their job is to help you and your institution meet your goals, and this includes ensuring your portfolio is aligned with your mission.

5) Divest stocks. Research divestment options for your other investments. Divesting stock holdings might be easier than divesting your pension fund or endowment, so if your institution invests in stocks, pursue that first. While mutual funds and endowments will take time to untangle from fossil fuels, if your zoo holds any stock in the Top 200 fossil fuel companies, divesting from these might be considered “low-hanging fruit” in comparison to finding a new investor for your endowment or researching fossil free mutual funds.

6) Spread the word. We know that you will not make a divestment decision lightly. Thus when you've decided to consider divestment, let Z&A for 350 know so we can celebrate your commitment and courage to lead. Announcing your intention to divest doesn't have to wait until you have all the logistics figured out. Cities like Seattle and San Francisco announced their consideration of divestment before their boards even met. This is something to be proud of, and though divestment will be complicated, the message it sends is not. Let your divestment serve as an invitation for other zoos and aquariums and your community to also actively participate in this movement.



Case Study: CBSG's Divestment Story

CBSG, a Specialist Group of the IUCN Species Survival Commission (SSC), is supported by a 501c (3) non-profit called the Global Conservation Network (GCN). In 2013, the GCN financial board agreed to divest its reserve funds from fossil fuels within five years (by the end of 2017).

CBSG began by investigating our investments to discover the degree to which we were invested in fossil fuels. In late 2012, we contacted Vanguard, the investment management company holding GCN's accounts, and looked inside the mutual funds to see which of the funds had exposure to the companies on the list of 200 firms that hold the most fossil fuel reserves. GCN unknowingly held investments in many of the top 200 firms. The next necessary step was for CBSG staff to educate ourselves about divestment so that we would be prepared to approach the GCN board with a convincing case for fossil fuel divestment. All of the information on divestment in the previous sections of this handbook was used to educate ourselves and later the GCN board.

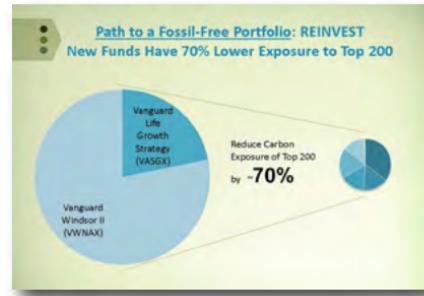


There was some initial concern from the board about how effective divestment would be to address climate change. The moral and political rationale of the movement, and the successful apartheid divestment effort on which the 350 campaign is modeled, were explained. The GCN board agreed with the principles, but remained concerned about taking on additional

financial risk, wanting to ensure that there would not be a dramatic reduction in portfolio returns. We discussed the concepts of stranded assets and the future risk associated with fossil fuel investments in a carbon-restricted world. Once it became clear to the board that GCN could align their portfolio to CBSG's mission without compromising their fiduciary responsibility, they unanimously supported the idea of divestment.

In February 2013, with the support of the GCN board, we began to investigate alternative investment options. We contacted Vanguard again to inquire about fossil-free options. After a fair amount of explanation and back-and-forth discussion with their representatives, it became clear that the investment brokerage did not have any obvious options for fossil fuel-free investments. A wider online search of fossil fuel-free investment funds did not turn up any that fit GCN's investment needs. Most of the funds currently available had relatively high fees and larger minimum investments than could be met by GCN's comparatively small investment portfolio. We hit a roadblock.

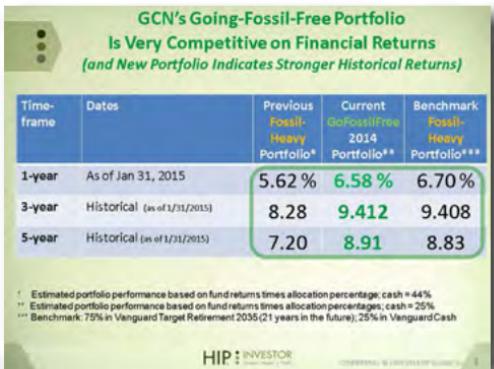
Fortunately, a short time later, 350.org and a financial advising company called HIP Investor conducted a webinar about divestment. After learning that HIP Investor designed portfolios that reduce knowable risks, seek enhanced returns, and pursue net positive benefit to society and the environment, we contacted the company and sent them information on GCN's current investments and goals for future investments.



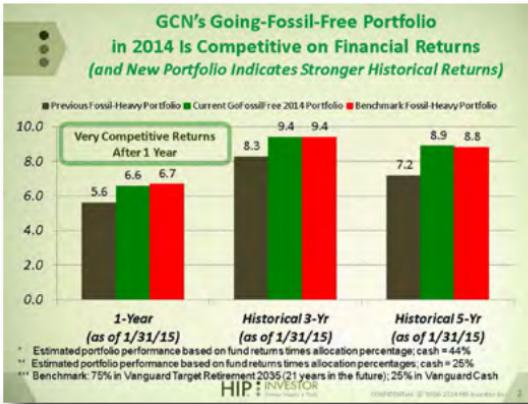
HIP Investor designed a strategy to achieve three objectives for GCN's portfolio: (1) be globally diversified, (2) earn a competitive return for the appropriate risk appetite, and (3) seek to go 100% fossil fuel-free.

To fulfill objective 1, the HIP Investor team started with a blueprint of how much to allocate to stocks, bonds, international firms, real estate and other types of assets. Then, with respect to objective 2, sought to earn a return that is consistent with moderate growth over a timeframe of about 15 years. This is a typical plan for an organization like GCN that seeks to grow the corpus or endowment. Achieving the final objective of 100% divestment would not be easy using mutual funds or Exchange-Traded Funds (ETFs), which can contain hundreds to thousands of companies. As the largest fossil fuel producers generally have large stock market values, companies like Exxon, Chevron, and

BP are found in many funds and portfolios. A typical portfolio has 8% of the market value in fossil fuel producers. Very few fossil-free funds exist today, though more are coming soon. To achieve a goal of going fossil free using mutual funds, investors may need to settle for a goal short of 100% divestment. It is possible to reduce exposure to fossil fuel producers by 70% to 85%, using 10 to 25 mutual funds.



With these objectives in mind, HIP Investor constructed a portfolio 70% free of fossil fuel producers and presented the information to the GCN board, comparing the carbon-heavy funds currently held to the majority-divested portfolio being proposed. In the end, the GCN board unanimously approved the new investment portfolio.



In February 2014, we called Vanguard and asked them to move our money to the new funds. By February 2015, one year after divestment, the new portfolio was performing better than it would have if still invested in the previous fossil-fuel heavy portfolio.

Through continued efforts, including contacting fund managers to educate and encourage them to create more fossil fuel-free investment options, we plan to have the GCN investment portfolio be 100% free of fossil fuel producers within by 2017.

Resources

KEY REPORTS

- **Stranded Assets and the Fossil Fuel Divestment Campaign** - Oxford Smith School of Enterprise and the Environment: <http://www.cbsg.org/sites/cbsg.org/files/SAP-divestment-report-final.pdf>
- **Unburnable Carbon** - The Carbon Tracker Initiative: <http://www.carbontracker.org/carbonbubble>
- **Beyond Fossil Fuels: The Investment Case for Fossil Fuel Divestment** - Impax Asset Management: http://www.cbsg.org/sites/cbsg.org/files/2013_AM/20130704_impax_white_paper_fossil_fuel_divestment_uk_final.pdf
- **Do the Investment Math: Building a Carbon Free Portfolio**: http://www.aperiogroup.com/system/files/documents/building_a_carbon_free_portfolio.pdf
- **Debunking Divestment Myths** - Go Fossil Free: <http://631nj1ki9k11gbkhx39b3qpzua.wpengine.netdna-cdn.com/files/2013/06/debunking-divestment-myths.pdf>

KEY ARTICLES

- **Global Warming's Terrifying New Math** - Bill McKibben in *Rolling Stone*: go.350.org/rolling-stone
- **Fossil Fuels and Sustainable Investing** – Joe Keefe: http://www.huffingtonpost.com/joe-keefe/fossil-fuels-investment_b_2664677.html?utm_hp_ref=email_share
- **Deep Green Investing** - Mark Gunther in *Ensia*: <http://ensia.com/voices/deep-green-investing/>

TOOLS

- **Do the Investment Math: Building a Carbon Free Portfolio FAQ:** <http://www.asyou sow.org/publications/2013/do-investment-math-webinar-qa-20130214.pdf>
- **Climate Change and Species Fact Sheet:** https://s3.amazonaws.com/s3.350.org/images/FF_Factsheet_Wildlife.pdf
- **Divestment Fast Facts** - http://www.cbsg.org/sites/cbsg.org/files/climate_change/Divestment%20Fast%20Facts.pdf

LINKS

- **Zoos & Aquariums for 350 Website:** <http://www.cbsg.org/zoo-aquariums-350>
- **350:** <http://350.org>
- **Go Fossil Free:** <http://www.gofossilfree.org>
- **Green America** - Reinvestment resources: <http://www.greenamerica.org/fossilfree/>
- **Responsible Endowments Coalition:** <http://www.endowmentethics.org>
- **Sustainable Endowments Institute:** <http://greenbillion.org/>



OFFSET CARBON EMISSIONS

The Zoos & Aquariums for 350 Carbon Offset Initiative, coordinated by the World Association of Zoos and Aquariums (WAZA), is in place to help zoos and aquariums that have already reduced their carbon footprint as much as possible to compensate for their institutions' unavoidable carbon emissions through the purchase of credible, additional, and sustainable carbon offsets.

Many zoos and aquariums have taken important steps to evaluate and minimize their carbon footprint, including innovative waste management systems, energy conservation measures, and updated buildings. Guides like BIAZA's Sustainability Guide and AZA's Green Guide (see "Resources") can be helpful for zoos looking to begin and continue these changes.

Carbon offsetting can be an important final step of an overall climate action plan, only to be used after marked efforts to reduce emissions have been implemented. Some zoos have already taken this step by compensating for remaining emissions through the purchase of carbon offsets.

There have been many debates about the merit of carbon offsets. Some companies who offset without first reducing their emissions are accused of "paying to pollute." However, carbon offsetting can be a useful tool as part of a clear, overall climate action plan. It can promote involvement in projects that not only keep carbon out of the atmosphere, but have additional environmental, social, and economic benefits as well.

To aid zoos and aquariums worldwide in compensating for their institutions' unavoidable carbon emissions, Z&A for 350 will partner with a carbon offset provider that offers projects that are credible, that would not have taken place without the investment in offsets, and that are economically viable, socially equitable, and

environmentally friendly. The projects selected will be compatible with WAZA's mission and focus on threatened species and related habitats, with preference given to tropical rainforest projects. Projects will be validated under an internationally accepted performance standard. More details will be available soon.

Participating institutions will report back to WAZA on their commitment to reduce and offset their carbon emissions. The statement that one zoo makes by taking action is powerful—the statement that a group of zoos makes is even more so. The strength of this initiative is in the collective effort of, and the example set by, the international zoo and aquarium community. Those institutions that are offsetting independently are encouraged to report their progress as well. This way the true impact of this ambitious commitment by our community will be fully recognized.



FAQ

How do carbon offsets work?

The offsetting process begins with calculating the amount of carbon an institution emits in a certain time period. Efforts to reduce this carbon footprint are made by reducing waste or improving energy efficiency. The amount of carbon emissions remaining can be balanced by purchasing carbon offsets. The purchase of carbon offsets provides funding for projects that measurably reduce global greenhouse gas emissions.



What is a carbon offset provider?

Carbon offset providers are companies that create portfolios of carbon offset projects and provide resources such as carbon emission calculators. Carbon offset providers can measure carbon footprints and help with an overall climate action plan leading to carbon neutrality.

How will the Zoos & Aquariums for 350 carbon offsetting process work?

Z&A for 350 is working to select a carbon offset provider for the zoo and aquarium community. This provider will work with zoos on whatever services they need: measuring carbon footprint, help reducing carbon footprint, and purchasing carbon offsets from that provider. The provider will offer a range of projects for each zoo to pick from to offset their remaining carbon emissions. Each zoo will do their own work within their institution, but will report back to WAZA about the amount of carbon they reduce and offset. WAZA will report on this information and celebrate progress on this initiative. More information on the reporting process will be available soon.

What are some examples of carbon offset projects?

Carbon offset projects include reforestation, renewable energy, methane reduction, energy efficiency, and bio-gas projects. Good projects include additional benefits besides offsetting carbon, including social, welfare, and health benefits for local communities and wildlife. These projects are certified according to agreed-upon standards created by third party registries. The Z&A for 350 offset provider will clearly state which standards their projects meet. Working with a provider enables each zoo or aquarium to choose projects that fit with its mission.

What are the standards in place to ensure successful projects?

The major voluntary carbon offset standards were developed to establish offset credits from emissions reductions as real, additional (meaning that it would not have occurred without money from carbon credits), and permanent. Credible standards clearly define the methodology for establishing baseline emissions, terms for project additionality, project type, third party verification and validation, and methodology for selling and retiring offsets. The provider selected will offer projects compatible with WAZA's mission and focus on threatened species and related habitats, with preference given to tropical rainforest projects.

How can we be sure our money is actually doing what we want it to do?

Z&A for 350 will choose a provider that is transparent in their project design, project standards, and review process. International standards reinforce the provider's promise that the money used to purchase offsets results in true reduction of emissions. Participating zoos and aquariums will be able to see detailed reports about their chosen project.

How much does carbon offsetting cost?

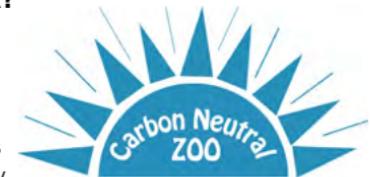
Our provider will have a set price per ton of carbon. Carbon emissions are calculated to determine the number of tons that offsets will need to be purchased for. The more tons of carbon your zoo emits, the more offset credits you must buy to achieve carbon neutrality.

What if my zoo is already carbon neutral or already offsets our carbon emissions?

If your zoo has already achieved carbon neutrality, or is already working toward it, you can still participate in this initiative! Simply report to WAZA on your progress, how many tons you offset, and the type of projects your institution invests in. That way, we can include your accomplishments in reports of global zoo efforts.

Does the concept of carbon offsetting work?

Offsetting is not an excuse to continue emitting carbon as usual, and must be preceded and supplemented by continued emission reduction efforts. It can serve as an incentive to further reduce emissions. The implementation of rigorous carbon offset standards has become a trustworthy indicator of offset project quality and actual greenhouse gas reductions, ensuring that the money paid for offsets is successfully reducing carbon emissions.



Five Steps to Offset Carbon

1) Commit to the Climate Change Movement Carbon Offset Initiative. Zoos will be at many different levels of carbon reduction in their institutions. No matter where you are, you can commit that your institution will:

- Measure current carbon emissions using online calculators or using the offset provider to help you with a carbon audit.
- Create a climate action plan for reducing emissions by updating infrastructure, implementing new waste management systems, and developing energy conservation measures for your zoo.
- Get everyone involved, from the director on down, through education and opportunities to participate. Sustainability must include everyone.
- Use the AZA Green Guide and BIAZA Sustainability Guide for getting started, and research zoo sustainability initiatives that you would like to implement at your own zoo.

Ready to get started? Join the Movement at <http://www.cbsg.org/content/join-movement> to indicate your intention to pursue offsetting for your institution.

2) Calculate Remaining Emissions. Some zoos might already be ready to offset after marked efforts to reduce their carbon footprint, while others might just be getting started. A number of online calculators can help you determine the emissions that remain after reduction and sustainability efforts.

3) Work with the Z&A for 350 Carbon Offset Provider. Z&A for 350 is working to select an offset provider that will work with zoos and aquariums at any part of the process, whether on reducing carbon emissions, measuring what remains, or offsetting remaining emissions. More information about this provider will soon be available.

4) Communicate. The statement that one zoo makes by reducing emissions is powerful – the statement that a group of zoos makes is even more so. So when you've decided to pursue carbon offsetting, be sure to report back to Z&A for 350 on your efforts (method for reporting will be available soon). Let's show the world that the international zoo and aquarium community is a leader in environmental sustainability.

5) Become Carbon Neutral. After hard work and time, your zoo may become carbon neutral. This step is likely years down the road, but WAZA and Z&A for 350 will be ready to report on your success when the time comes.

Resources for Offsetting

Zoos & Aquariums for 350 Website: <http://www.cbsg.org/offset-carbon>

Getting Carbon Offsets Right: A Business Brief on Engaging with Offset Providers
http://www.bsr.org/reports/BSR_Getting-Carbon-Offsets-Right.pdf

Responsible Purchasing Guide: Carbon Offsets: http://www.responsiblepurchasing.org/purchasing_guides/carbon_offsets/purchasing_guide.pdf

Carbon Catalog: www.carboncatalog.org

AZA Green Guide: http://www.aza.org/uploadedFiles/Conservation/Commitments_and_Impacts/Green_Practices/The%20Zoo%20and%20Aquarium%20Green%20Guide.pdf

BIAZA Draft Sustainability Guide: <http://www.biaza.org.uk/uploads/climate%20change/BIAZA%20Sustainability%20Guide%20-%20FIRST%20EDITION%20June%202013.pdf>

SHOW THE WILD FACE OF CLIMATE CHANGE

Clear communication about the effects of climate change on all species plays a key role in our pursuit of collective action on climate change. Many zoos already communicate with their visitors about this threat, and here is another way to invite zoo keepers and visitors to add their own voices to the mix.

350.org has a feature called “Showing the Human Face of Climate Change.” Any person from anywhere in the world can submit a photo that depicts how climate change and extreme weather has affected them and their local communities. The subjects of the photos hold signs that have the numbers “350” on them as well as any other message they’d like displayed.

Zoos & Aquariums for 350 has a corresponding feature called “Showing the Wild Face of Climate Change.” You can contribute to this part of the movement in a few unique ways:



- Submit a photo of one of your species. The photo could contain a sign with the Zoos & Aquariums for 350 logo printed or drawn on it. Have a keeper/director/team hold up a sign in front of/with the species, or find another way to represent 350 in the photo.
- Incorporate a photo project based on this idea into educational activities. Perhaps in the classroom, five species in the zoo that are affected by climate change are discussed. The children are given “Zoos & Aquariums for 350” signs and the opportunity to identify those animals and take photos of themselves in front of the exhibits holding the signs.
- Develop your own creative project to spread the word and celebrate your institution’s commitment to Zoos & Aquariums for 350 Movement! Be sure to share your successes with CBSG so your efforts can be publicized and duplicated.

Send a short description of why this species shows the “Wild Face of Climate Change,” such as how it has altered their habitats, caused their populations to decline, etc. Keep it short and simple—it should be no more than one or two sentences.
Example:

“Polar bears like this one suffer from climate change-caused effects on their Arctic habitat. Because of sea ice melting, changes in hibernation patterns due to warmer weather, and complicated predator-prey alterations, polar bears are critically endangered and suffering the effects of human-caused climate change.”

The Zoos & Aquariums for 350 logo is available for free download at:
<http://www.cbsg.org/wild-face-climate-change>.

Submit your photos here: <http://www.cbsg.org/content/wild-face-climate-change>



OTHER WAYS TO PARTICIPATE

If you're not affiliated with a zoo or aquarium, you still have a major role to play in this movement. Whether you're a professor, researcher, government employee, or a biologist engaged in fieldwork, your voice united with the movement helps amplify the message of 350.

As part of a university – The Z&A for 350 movement is joining a broader movement that is focused on the role of colleges in fighting climate change through divestment. The divestment movement is gaining ground in the US, with over 400 student and faculty-led campaigns for divestment, and is beginning in other countries like Australia, Canada, and the Netherlands. If you're a student or professor, check for a campaign at your university: <http://gofossilfree.org/campaigns/>. If one has not yet been started, consider researching what it would take to start a campaign. There are a multitude of helpful resources at gofossilfree.org.

As a government employee – Governments at the city and state levels are considering divestment. As someone who works in government, you can be a powerful voice for moving divestment forward within your organization for the sake of conservation. For more about government campaigns, visit <http://gofossilfree.org/cities-states/>.

In the field – "Showing the Wild Face of Climate Change" can be equally as powerful coming from the field, where climate change effects on habitat and species are apparent. Using the same principles as the zoo and aquarium "Showing the Wild Face of Climate Change," bring a sign or piece of paper with you with the 350 logo (download here: <http://350.org/en/logos-graphics-templates>) and photograph a species of interest or a diminished habitat with the sign creatively incorporated.

As an individual – 350.org and gofossilfree.org have numerous campaigns and projects for individuals to become involved. Check out their websites to discover what is going on and find what you're passionate about within the movement.

The European Association of Zoos and Aquaria (EAZA) and the U.S.-based Association of Zoos and Aquariums (AZA) have implemented their Pole to Pole campaign. The campaign focuses on threatened species in the Arctic and Antarctic, and includes practical actions that individuals can take to help conserve energy and live more sustainably. Find out more at <http://www.poletopolecampaign.org>.

We want to celebrate and support your work so be sure to let Z&A for 350 know how you've decided to become involved.

*We'll never get the
solutions we need ...
unless we build the
movement first.*

- Bill McKibben

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Acknowledgements:

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The Zoos and Aquariums for 350 movement was inspired in response to a call to action from the 2012 CBSG Action Planning Working Group. Thanks to the CBSG Climate Change Movement Task Force for reviewing the content of this handbook.



350

The logo consists of a large orange hand-drawn style 'X' mark. To the right of the 'X', the word "FOSSIL" is written in a black, bold, sans-serif font, and "FREE" is written directly below it in a similar style.