

Climate Action Commission Listening Tour

Manchester, VT Meeting, September 21, 2017

Commission members in attendance: Deputy Secretary Peter Walke, June Tierney, Bill Laberge, Tom Donahue, and Robert Turner. Attendance per signup sheet: 77 people.

Bill Thwing: See comments entitled "*Climate Action Commission Public Hearing.*"

Stefanie Moffit-Hynds- Vermont's renewable energy standard should be 100% renewable ASAP. I'm in favor carbon pricing. I work with 8<sup>th</sup> graders and when asked to identify one thing to help climate change, their number 1 suggestion is carbon pricing. If 8<sup>th</sup> graders get it, why don't we? I'm a mother and for my kids and their kids and they have a president who tells them climate change isn't real, I'm glad there's hope.

Keith Dewey-We're not moving fast or aggressively enough. We have to triple efforts to be more aggressive. We have to convert industrial, residential, and transportation to clean green electricity or minor blend of biofuels or biomass. We need carbon tax as necessity. Carbon tax plans aren't close to aggressive enough to match problem with real world solution.

Jim Hand- Suggests price on carbon. Some say that carbon pricing would disrupt economics, but after Harvey fuel sales in VT went up 30 cents per gallon.

Jerry Byrd—VT had foresight to ban billboard in 1969, we should be ahead on climate change too. I want us back in charge of our energy and be 100% renewable. Put a price on carbon and fines. Europe and Canada manufacture products to heat and cool more efficiently, they are cut out of the market from getting here. They don't sell because they think Americans won't get it. Why don't we have technical jobs like that, distribution and construction jobs available in VT? California has leapt ahead of us. Norway and France and China and India fossil fuel cars won't be sold in their countries anymore. The windmills don't get in the way of the beauty here. PSB has backward policies: 250kw system was slammed due to technicality

Barbara True-Weber-See comments entitled "*Barbara True-Weber CAC Comments.*"

Karen Lee-See comments entitled "*Karen Lee CAC Comments.*"

Mike—Solarfest; education. About half of the state doesn't believe in clim change. If ppl understand it'll affect them directly, they don't think it'll impact them directly. If we can impact those attitudes, we can move forward. In NY focuses more on transport and heat and not just electrification. They're providing \$6k in rebates for ground source heat pumps. The other is a revers tax for clean energy employers, paid for by higher energy taxes; give them a credit per employee paid for the gas tax.

Doug Grandt—We need a hard cap replace refineries with renewables. We should put a refinery out of business at a rate of 1/week. We can limit amount of gas/diesel to adjust carbon tax that doesn't work. . See also comments entitled "*Doug Grandt's CAC Comments.*"

Jen Lalor—See comments entitled “*Jen Lalor CAC Comments.*”

Mary Lines—I believe that VT can protect its environment and health of its citizens and also stimulate economy by investigating alternative energy solutions. Put price on carbon pollution.

Bob Allen—See comments entitled “*Bob Allen’s CAC Comments*”.

Ed Morrow—Have to ditto carbon pricing, any level that we’ve talked about isn’t effective. Carbon pricing would need to be at the European level to be effective. I’m in favor of severe pricing, the govt needs to do it in holistic way taking into account effects on all citizens and in a state with little public transport, severe rises for fuels could hurt percentages of population who can’t afford greater rates. We should be pushing for charging stations all over the state to make electric cars more affordable. We should also put a climate change office in the governor’s cabinet. All state agencies should be in agreement with each other. Are we making environmentally sound changes at state level?

Mark Ramely—Residential heating is the biggest impactor. There should be a state-funded work group to promote education of plug in vehicles. Retailers are ignorant of benefits of electric cars. Dealers refuse to use these cars and say aren’t worth the investment.

Steven Davis—VT DEC should be getting ideas from NY DEC as they are leaders in this country. In 2006, the VT governor signed bill (House Bill 28) for light pollution. Since then, the committee hasn’t even met and nothing happened or enforced. Don’t let the CAC be the same.

Ellen Malona—Transportation as an issue. My solutions: extending subsidy or encouragement to power companies who extend phase III power further; isn’t common in rural areas. This is necessary for fuel charging stations. Phase III reaches more clean energy generation. This was required by Act 174 and we need that assistance to make town plans accordingly. No public transport reaches rural areas; there are many bedroom communities in Bennington county. Need encouragement for van services or subsidized. People can shop in groups and it could serve more than 1 purposes (aging population).

Tony de Pon—Climate change may correlate more with solar activity and not human interaction. Governor should look at the science to take a deeper look to see if it’s from carbon dioxide.

Carl Bucholt—I support carbon pollution tax; we can do it and fairly. Effects of hurricane are high, but less than what we give as subsidies to oil companies. We can use the money generated by the tax for electric charging stations around the state. It needs to be feasible. Methane is huge and state need to mitigate emissions from dairy or landfills. Fracked gas and oil releases methane to atmosphere; pipelines in the press should be banned because gas and oil going through them will contaminate. State should divest completely from banks TD bank, Chase, Wells Fargo.

Consie West—Europe has had carbon pricing for a long time. Weatherization, how do we pay for that? We have old housing stock, need to help population weatherize.

Dr. Alan Betts—See comments entitled “*Climate Action Commission Hearing, Testimony by Dr Alan Betts*”.

Alexandra Heintz—The time is now. We don't have recycle bins and compost here in VT.

Sabrina Melendez—See comments entitled “*Address to Vermont's Climate Action Commission*”.

Kendra—VT redistributes a hidden cost on carbon energy.

Zoe Aloise—See comments entitled “*Zoe Aloise CAC Comments*”.

Eva Krukowski—Public transportation is something we're passionate about. Electric cars and charging stations are a good start but we can take a step further with electric public transportation and busses. It affects all of us. It's a huge contributor of carbon emissions; carbon taxing, we can all pay our fair share.

Sofia Dantzig—make sure that every person sees Sabrina's speech. Also, see comments entitled “*Sophia Dantzig CAC Comments*”.

Ben Watson—Climate change affects all aspects of living. Put a price on it. It will decrease our own carbon output and that affects all of us personally.

Emma Ogden-Wolgemuth—I support carbon tax. We also need to have more open discussions like this. If communities can have open dialogues, they can get the information out there to people who don't have access otherwise. Governor should get the information out there so we don't live in the closet of ignorance.

Stevie Martinez-Farias—See comments entitled “*Stevie Martinez-Farias CAC Comments*”.

Oliver Ferland—Carbon pollution is damaging our health, economy, and only planet. We can put the price on carbon emissions and this will be good for our health. Carpool in your Subaru.

Annette Smith—See comments titled “*Annette Smith CAC Comments*.”

Trey Bowman—We have a lot of privilege due to geography. We should be democratizing renewable energy sources. I urge the commission to implement a carbon tax. This tax isn't solution; it's the foundation. If we shift burden off backs of developing world; we put it on to the producer who contributes to climate change.

Carl Diethelm—I have 3 suggestions: 1) put a price on carbon especially for polluters that are damaging the air. I want to see that money going to renewable energy, weatherization and backing legislation such as the universal recycling law. We need a lot more infrastructure if we're going to make it to zero food scrapes in the landfill by 2020. 100% renew energy, 100% food out of landfills. 2) We should label homes and appliances to show that consumers will save money on efficiency 3) We need a public bank. The bank could be in Poultney as we just lost our bank.

Daniel Hibbs—See comments entitled “*Dan Hibbs' CAC Comments*”.

Edward Cameron—We should plan with a positive vision for prosperity and not just a carbon reduction plan. There are big opportunities, lots of companies that make climate decisions based on availability of green energy. We should make plan for employment. This needs to be joint between private people and the government. Climate change can't be solved just by the government. We need education. We need to invest in a social justice policy. Lower income individuals are hit first and hardest by climate change and we can't have that. We need the full power of public purse, public procurement, and to end the perverse preference to oil companies. Mostly, we need an activist governor. The Republican party has lost its sense on this issue. We need a Republican leader who'll take on his party. This can't be a partisan issue.

Jennifer French--Food security is important. I think we've gone too far to fix climate change. Now I suggest thinking for each other and yourselves, how will you eat? The subsidies going to agriculture should go to feeding people in the crisis that we're facing. I'm worried about people surviving. We should make sure there are local areas where people can come together and can survive.

Tim Marr—I support a carbon tax. Weatherization should be given from tax \$; EVT doesn't have good enough subsidies. There should be more community solar; it's becoming more difficult to install solar. Community solar should be allowed on land approved by neighbors. PSB is the problem. Need reasonable sound regulations on wind turbine because they are necessary. Fund alternate transportation.

Theo Talcott—There is a lot of work to be done with PSB or utilities commission; they're in the way of progress. Green Mountain Power is monopoly. VT should create its own solar utility and roll out solar all across the state as if it's an emergency; we can do it on our own. We've let the state be taken over by the market too long but it's an emergency. The crisis is here, let's not pretend it's not afoot. VT gas pipeline: had huge leak in Manchester. Why is state pushing natural gas on the people of Vermont? Should be integrated. State could encourage Netherlands style bike paths. We need activist governor.

Jillian Joyce—There should be job training for renewable energy, wind turbines in Barre. Schools should be models, should have electric car charging stations, lots of these as options. We should create a network for online commuter sharing.

Eric Hangen—Carbon should have high price tag. We should be paying at the pump the cost we put on other people. We try to use the discount rate of economics. This is: Discount rate: try to discount the future, the future is worth 5% less than this year, etc. We get down to zero pretty quickly. I created the Heat squad, wrote \$5M grant, raised \$5M from BOA and TD, in Rutland county. From this, Vermonters are saving \$1M/year. That \$1M is spent on the local economy. Did this without state support, no operating money.

Caroline Kimball—Points out that in Australia, if you need cows with seaweed, you decrease methane by 90%.

Rob Kidd—I encourage local action. Vermont can be beacon of leadership on this. We need to stop being in politics of denial, move forward despite more taxes.

Peter Bosco—These suggestions involve a lot of money. The media likes to scare people; controversy is the wheel that drives everything. I believe the biggest environmental problem we face—the elephant in room-- is global population. Climate change is great if there's no place to stand, what about water and food? You've got tunnel vision; it should focus also on zero population growth.

Bruce—supports governor looking at equity and vulnerable populations. Must point out his 1<sup>st</sup> objective [economic development] is directly in conflict with the goal of addressing climate change. Current obsession with growth has to stop. We must think of higher levels of economic thought, think of systems of infrastructure, make sure we address that materials and workforce on site to deal with crisis of weather and climate in coming decades. Locally centered and resilient.

Robin—Vermont has a relatively small impact related to carbon footprint. Need a regional compact for New England to make an impact. Should act in concert to multiply our efforts.

Mark Raymaker—See “*Mark Raymaker CAC Comments*”.

Name	Town	I wish to speak YES / NO	
Muriel Roeth	MANCHESTER	<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ Bill Thwing	BENNINGTON	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Joel Thwing	Bennington	<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ Stephanie Moffett-Hynds	Arlington	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ KATH PENNEY	WESTON	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Jim Hand	Dorset	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Jerry Byrd		<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Barbara True-Weber		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rexie Byrd		<input type="checkbox"/>	<input type="checkbox"/>
<del>MIE WEBER</del>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Andrew McKeever	Sunderland	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Jean Ceglowski		<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ KAREN LEE	ARLINGTON	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Mike Bailey	Manchester	<input type="checkbox"/>	<input type="checkbox"/>
✓ Doug Grandt		<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Jen Lalor		<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Paul Myers	BOB ALLEN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
✓ Ed Morrow	Manchester	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Mark Raymond	SAAFTSBURY	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Mary Lines	S. Londonderry	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Stephen Davis		<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Ellen Malone	East Dorset	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Cam/duPont	Manchester	<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ Tony duPont	" "	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Name	Town	I wish to speak YES / NO	
Carl Bucholt	Manchester	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Bob Allen	Dorset	<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ Consie West	Manchester	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ ALAN BETO	Pittsford	<input checked="" type="checkbox"/>	<input type="checkbox"/>
x Carina Steficek	Eagle Bridge	<input type="checkbox"/>	<input checked="" type="checkbox"/>
x Benni Ehlers	Eagle Bridge	<input type="checkbox"/>	<input checked="" type="checkbox"/>
x SILVIA H. Britzer	Primal VT	<input type="checkbox"/>	<input type="checkbox"/>
✓ Christine Anderson	Manchester Center VT	<input checked="" type="checkbox"/>	<input type="checkbox"/>
x ALAN DAY	MANCHESTER CENTER	<input type="checkbox"/>	<input checked="" type="checkbox"/>
x KATHLEEN JAMES	MANCHESTER CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ Alexandra Heintz	" "	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
x Alvin Clemens		<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ Sabrina Melendez	Bennington, VT	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Kendra Ouellette	Bennington	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ EVA KAWOWSKI	Bennington	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Zoe Aloise	Bennington	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Sophia Dantzie	Bennington	<input checked="" type="checkbox"/>	<input type="checkbox"/>
x Viva Wittman	Bennington College	<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ Ben Wilson	Bennington	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Emma Ogden Wolgemuth	Bennington	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Silvia Martinez-Fariis	Bennington College	<input checked="" type="checkbox"/>	<input type="checkbox"/>
x Hannah Wolfick	↓	<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ Oliver Ferland	" "	<input checked="" type="checkbox"/>	<input type="checkbox"/>
x Katharine Ruegger	Bennington College	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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x <u>Wsalabey</u>	<u>Dorset</u>	<input type="checkbox"/>	<input type="checkbox"/>
x <u>BRIAN KEEFE</u>	<u>MANCHESTER</u>	<input type="checkbox"/>	<input type="checkbox"/>
x <u>James Pele Johnson</u>	<u>"</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
x <u>Tim Lalor</u>	<u>Manch</u>	<input type="checkbox"/>	<input type="checkbox"/>
✓ <u>Annette Smith</u>	<u>Dorset</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
x <u>Carol Ann Hawkins</u>	<u>Rupert</u>	<input type="checkbox"/>	<input type="checkbox"/>
✓ <u>Trey Bowman</u>	<u>Poultney</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ <u>Carl Diethelm</u>	<u>Poultney</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ <u>Daniel Hibbs</u>	<u>Jericho</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
+ <u>Martinez Victor</u>	<u>Manchester</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
+ <u>Thomas Hughes</u>	<u>BTV</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
x <u>Carina Bachofer</u>	<u>Manchester</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ <u>EDWARD CAMEKON</u>	<u>Manchester</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
x <u>Ryan Yoder</u>	<u>Dorset (At End)</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
x <u>LEONIA SISKIND</u>	<u>Dorset</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
x <u>Mary Ann Carlson</u>	<u>Arlington</u>	<input type="checkbox"/>	<input type="checkbox"/>
x <u>Tony du Pont</u>	<u>Manchester</u>	<input type="checkbox"/>	<input type="checkbox"/>
✓ <u>Jennifer French</u>	<u>Dorset</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ <u>Theo Talcott</u>	<u>Manchester</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ <u>Tim Marr</u>	<u>Bennington</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
* <u>Kathy Martin</u>	<u>Manchester</u>	<input type="checkbox"/>	<input type="checkbox"/>
x <u>John + Becca Herrington</u>	<u>Sunderland</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ <u>Jillian Joyce</u>	<u>Pew</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
x <u>Robin Chesnut-Tangerman</u>	<u>Middletown Spr.</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Name	Town	I wish to speak	
		YES	NO
<del>Dee Myer</del>	<del>Manchester, VT 05255</del>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
✓ ERIC HANGEN	DANBY VT 05739	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Caroline Kimball	Sandgate, VT 05250	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
✓ Robb Kidd	Montpelier VT 05602	<input checked="" type="checkbox"/>	<input type="checkbox"/>
✓ Peter Bosco	Shaftsbury, VT 05262	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**From:** [Walke, Peter](#)  
**To:** [Thomas, Terisa](#)  
**Subject:** FW: VT Climate Action Commission - comments  
**Date:** Friday, September 22, 2017 11:27:19 AM

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To augment your notes

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**From:** Doug Grandt [mailto:answerthecall@me.com]  
**Sent:** Thursday, September 21, 2017 8:32 PM  
**To:** ANR - VCAC <ANR.VCAC@vermont.gov>  
**Subject:** VT Climate Action Commission - comments

Outline of my oral comments this evening:

Doug Grandt - Putney VT (ex-CA)  
2006-2012 - CalEPA-ARB (AB-32)  
2007 - Gore, AIT 150 presentations  
2008-2013 - CCL 60+ lobby mtgs

IOP Science - logarithmic

- gas and coal POWER PLANTS
- Passenger cars & light trucks
- Freight (HD trucks & rail) diesel
- Aircraft JET FUEL kerosene
- Boats & ships DIESEL

### **MULTI-LEVEL CARBON FEE**

How long will a carbon ge take to have the desired effect?

- \$10/ton, \$25/ton, \$50/ton ...
- increasing \$10, \$25, \$50/year
- increasing with CPI (~2%/year)

CCL REMI study is flawed/

HARD CAP ON REFINING & SALES

#RetireRefineries

#OnePerWeek (~750 refineries)

#ReplaceRefineriesWithRenewable

**Solution submitted to VNRC**

Place a steadily declining cap of sales and combustion of gasoline, diesel, kerosene, propane, methane and other carbon-based fuels counting down to zero consistent with James Hansen et al's latest paper, which is his testimony for Our Children's Trust lawsuit "Juliana v U.S."

[Bit.ly/IOP25Aug15](http://Bit.ly/IOP25Aug15) - IOP Science

[Bit.ly/HansenPLOS](http://Bit.ly/HansenPLOS) - James Hansen

[Bit.ly/KevAnd13Aug13](http://Bit.ly/KevAnd13Aug13) - K Anderson

[Bit.ly/FWW24Oct16](http://Bit.ly/FWW24Oct16) - BC Canada

Regards,  
Doug Grandt  
Putney VT  
510-432-1452

Sent from my iPhone (audio texting)

**From:** [Walke, Peter](#)  
**To:** [Thomas, Terisa](#)  
**Subject:** FW: Thursday night Manchester Burr and Burton  
**Date:** Saturday, September 23, 2017 7:19:10 AM

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Could you addend these to his remarks please.

**From:** Mark Raymaker [mailto:markraymaker@gmail.com]  
**Sent:** Friday, September 22, 2017 2:35 PM  
**To:** Walke, Peter <Peter.Walke@vermont.gov>  
**Subject:** Thursday night Manchester Burr and Burton

Mr. Walke,

I'm the speaker who raised the retail auto dealer problem stocking Plugin vehicles particularly in Bennington county. Their excuse is the classic "chicken & egg" answer. They say they will make an effort when the public shows interest. They will take a risk of stocking a \$50,000 + high performance vehicle but will not risk investing in the tools and technician training necessary to stock a Plugin vehicle.

I forgot three other quick items:

- A. The almost complete non enforcement of the existing idling laws.
- B. The haphazard installation of electric vehicle charging stations, too many Level II chargers in one location and no Level III Chargers in another location.
- C. Currently there are no ICEing laws in Vermont. Internal combustion engine vehicles parking in electric vehicle charging locations will suffer no penalties.

I am willing to assist you and your committee about these specific issues.

Thanks  
Mark Raymaker

Sept. 21, 2017

## Annette Smith CAC Comments

Annette Smith  
Danby, Vermont

### Specific Recommendations for Action Items for the Climate Action Commission

- Widespread Adoption of Solar Hot Water
  - 15 to 20% of home energy use is to heat water. Solar hot water is cost-effective, payback is much less than PV
  - adoption of solar hot water heating can result in meaningful reduction in fossil fuel and electric consumption
- Work with Manufacturers and Entrepreneurs to Develop and Deploy low watt appliances. Require prominent disclosure of watts. Challenge to getting off fossil fuels from a renewable household perspective is high MW of household appliances. There are no good alternatives to propane on the market in the U.S. at this time for refrigerators or kitchen ranges/cooktops
  - Refrigerators, kitchen cooktops and ranges, vacuum cleaners, toasters and other appliances, especially those that involve heating, require high electricity use. Watts are not well disclosed and have become more difficult to find in product literature. Energy Star rating is meaningless.
  - EU just enacted a 900 Watt limit on vacuum cleaners  
<http://www.bbc.com/news/business-28878432>
  - Propane kitchen ranges may contain undisclosed electric glo-bars drawing as much as 500 kW of electricity. I learned about it by trying to get rid of the pilot light in the gas range, and after reviewing the literature to make sure of its electric use for the piezo-electric lighting, purchased a new kitchen range which contained an undisclosed electric glo-bar that comes on every time the oven is in preheat or heating mode. I hardly ever use the oven now.
  - Several years ago Amory Lovins wrote in the NY Times about a 300 Watt electric kitchen cooktop. I contacted him, he gave me the info, it was a European manufacturer. Seems to have vanished. We know it is possible!
  - See Rep. Curt McCormack's recent commentary  
<http://www.burlingtonfreepress.com/story/opinion/my-turn/2017/09/07/opinion-support-appliance-energy-efficiency/105322932/>. Though he says refrigerators use less power than in the past, they are still not efficient enough for a renewable energy system
- Develop hemp clothesline and wooden clothespin manufacturing and marketing to reduce use of high energy use clothes driers.
  - Hemp is medicine for the earth, drawing pollutants out of contaminated soils
  - The wood forest products industry is in decline. Clothespins used to be available from Vermont manufacturers. Bring back the Vermont clothespin, packaged with the hemp clothesline.
- Other Ideas to address Climate Change
  - Plant trees
  - Transition to Organic Farming
  - End war
  - Commuter Rail on Western Corridor

Sept 21, 2017

Hello. My name is Zoe Aloise and I am a student from Bennington College. Thank you for coming to hear our thoughts and concerns. Climate change is already affecting us so much and I'm especially concerned for ~~my~~ a good friend of mine from the U.S. Virgin Islands who has family, friends and a community that is currently ~~being~~ struggling to get their lives back together because of Hurricane Irma, which was more devastating because of ~~the~~ climate change. We have the chance to reduce pollution, save millions of lives, and protect the environment. We can find the solutions to the climate crisis ~~with starting with with~~ by putting a price on carbon emission. Thank you again for your time.

I hope to be a teacher ~~someday~~ and those kids deserve to live in a ~~the~~ world where we are ~~at least~~ making progress in ~~to fight~~ climate change. the fight against

I have spent the last 10 years at a sleepaway camp in Chester town, MD. This camp is founded on Quaker values and because of this, we ~~sleep~~ live in platform tents and do not have AC. With that said, we can feel climate change ~~get~~ making the summers more hot and ~~uncomfortable~~ uncomfortable. Put a price on carbon emission and also do every other possible solution within reach now. We made this mess and it is up to us to fix it.

## Climate Action Commission Public Hearing

Manchester, Vermont

September 21, 2017

Hi, My name is Bill Thwing, I live in Bennington ...where we are members of Bennington Climate Advocates which is a node of 350.org. I am also a member of the Citizen's Climate Lobby which is based in Burlington.

We want to thank Governor Scott and the members of the Climate Action Commission for coming here to Southern Vermont to listen to our concerns.

We are here to affirm unequivocally that Climate Change is very real;...and that it is going to have profound and lasting effects upon our state,... our nation and indeed upon our entire civilization. Six years ago, Vermont experienced the wrath of hurricanes Irene and Lee. Some of the damages of those storms.. have still not been repaired. That little storm cost Vermont 733 million dollars to partially repair and cost the nation 15.8 billion. **The storms that we are currently experiencing at this very moment, - Harvey, Irma, Jose and Maria** which are said to be some of the largest storms in recorded history are estimated to cost the nation 300 billion to repair.

It's not going to get any better. Every year the storms are going to get bigger, more destructive and more costly to repair until we get serious as a nation and as a state about responding to the threats of Climate change ...decisively.

Looking South.....At the response of states like Texas and Florida:... Vermont needs to be prepared to deal with the extreme weather events that are surely coming in the next few years. We need to have a plan and citizen first responders who are knowledgeable of the plan and are prepared and equipped to implement the plan when extreme weather events besiege us.

Looking to the North....we see a whole different kind of solution...a preventative solution, ..an economic solution, ....a multi trillion dollar... clean technology adoptive solution ,...a clear path to getting rid of the polluting carbon based fuels that are causing these extreme weather events and then moving forwards towards....a totally non-polluting, clean fuels based electrification of the national grid.



I lived in Canada for many years..both in Alberta and in British Columbia. In 2008, British Columbia, where I went to School, took a bold step and enacted a progressive ..revenue neutral.. carbon pollution ..fee and dividend...tax. It has been praised as the most significant carbon tax in the Western Hemisphere. It has transformed the economy of British Columbia. As of 2012, it was frozen at \$30/ ton of carbon-dioxide carbon equivalent emissions. As of this coming April, British Columbia will be adding \$5/year to the tax until it reaches \$50.00/ton in 2021. It has helped British Columbia to economically out-perform every other Canadian <sup>Province</sup> since its inception in 2008..., it has reduced British Columbia's carbon emissions dramatically since 2008 ....and thru their climate action tax credit system, it has insured that low and middle income families in British Columbia have benefitted from the transition of a clean energy economy. It has also... provided an example of what is possible.. to all of Canada ...so that as of 2018, 100 % of Canadian Provinces will have a revenue neutral carbon floor price of at least \$10/ton. All things are possible for those who are willing to take risks in dangerous times.

We urge Governor Scott and the climate Action Commission to look both North...and South for solutions to dangerously escalating Climate change and the extreme weather events which will inevitably accompany it. If small and nimble state like Vermont is willing to take the initiative, and set the example, we believe that there is a growing bipartisan Climate Solutions Caucus in the US Congress that will be urging the rest of the States to follow suit.

We support ... and ...strongly urge... Vermont .... to put a price on carbon pollution. ... I repeat **"Put a price on carbon pollution"**

Again,... we thank the governor and the Climate Action Commissioners of Vermont for listening to the concerns of our citizens. Thank you.

William C. Thwing

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802-681-6714

Climate Action Commission Hearing.

Sept 21, 2017, Manchester

### Testimony by Dr. Alan Betts.

I have worked as an atmospheric scientist studying weather and climate for fifty years. Full biographic and research details are available at <http://alanbetts.com>. I write for the Vermont newspapers, give frequent talks, and have advised citizens, professionals and the State of Vermont for ten years. I was on the advisory group for Governor Douglas' Climate Change Commission. As the request of the State climate change coordinator, Sandy Wilmot, I am currently updating my review document "Climate Change in Vermont" originally written for the State in 2011.

### My notes for discussion

#### Climate change basics

Global climate change is slowly accelerating, driven by the increase in greenhouse gases (GHGs), which reduce the cooling of the earth to space. The GHG increase is driven first by the burning of fossil fuels. The climate response involves the increase in atmospheric water vapor, which comes from increased evaporation as the Earth warms: this triples the radiative impact of the CO<sub>2</sub> increase. In addition, as the earth warms, ice and snow are lost which reflect sunlight and this roughly doubles the climate response in the winter at northern mid-latitudes, and in summer in the Arctic. The lifetime of CO<sub>2</sub> in the atmosphere is more than a century, and timescales of the Earth are long. However, ice is melting, and the oceans are warming as they store the heat (that cannot be radiated back to space until the Earth gets warmer, which takes many decades). If we burn all the fossil fuels this century, we will push the climate over time back to the tropical hothouse climate of the Carboniferous era, hundreds of millions of years ago, when the fossil fuels formed. Stabilizing the climate means stabilizing CO<sub>2</sub> in the atmosphere, and that means reducing global emissions from their current value of 36Gt CO<sub>2</sub>/yr by 80%. To have a 50% chance of keeping the warming of the globe below 2°C, we need to leave 2/3 of the remaining fossil fuels in the ground.

#### Our economic system discounts the future, but the earth cannot.

The Earth is simply accumulating/storing the heat imbalance of the Earth, mostly in the oceans, now and for centuries to come; and this is accelerating climate change.

***Current example is that when the stored ocean heat is circulated up to the surface in the tropics, the warm surface temperatures drive more powerful hurricanes: this year in the Gulf and Caribbean (4 major storms: massive damages. Downstream damage estimates of climate change this century are as high as \$1000 trillion)***

Historically we have never paid for the future costs from burning fossil fuels. Now some argue it is an "Unfair cost to the free market - that would reduce our profits." This is society's historic frame: maximize profit/minimize costs now and discount the future – treat the future so it becomes worthless in a generation. In other words the lives of our children and grandchildren, and the Earth itself, have no value compared with maximizing value and profit now.

#### Another argument is that something is 'not cost effective'

But as soon as one asks 'not cost effective' for whom, or when; it is clear that the assumption is for the current bottom line: to minimize costs and/or maximize profit. Let others pay the future costs that are already astronomical. In reality, our children and the Earth cannot pay these costs.

In fact, \$1 billion spent now on mitigation reduces future costs and suffering by an estimated \$60 billion. Is that cost effective for our kids and the Earth? Of course it is, until we discount their future.

**True Bottom line** is that the ground rules/ assumptions of our current economic system are essentially worthless when it comes to dealing with climate change. But this committee has the insight to change those rules for VT's future.

**The first fix is** a price on fossil carbon: a fee, a tax. This is needed to build a fund to pay for mitigation now and the future costs. (Then new ground rules to maximize energy efficiency, remanufacturing)

Quebec introduced a **Green Fund**, a levy on carbon pollution, **dedicated only to reducing GHGs**. In 6 years it has raised CDN\$1.2B for infrastructure projects and jobs. These will move the province towards a more efficient society with a non-fossil fuel energy base, where the poor are not left behind. It has worked to benefit and revitalize the Quebec economy.

VT should do likewise; a carbon levy, fee or tax for a Green Fund to mitigate GHGs, provide jobs and offset future costs that are spiraling out of control.

**Practical issues for this Commission to address.**

**Electricity** is on a realistic path, as it moves towards a distributed grid, powered by renewables, with the infrastructure support of Efficiency VT and the utilities. Accelerate where feasible.

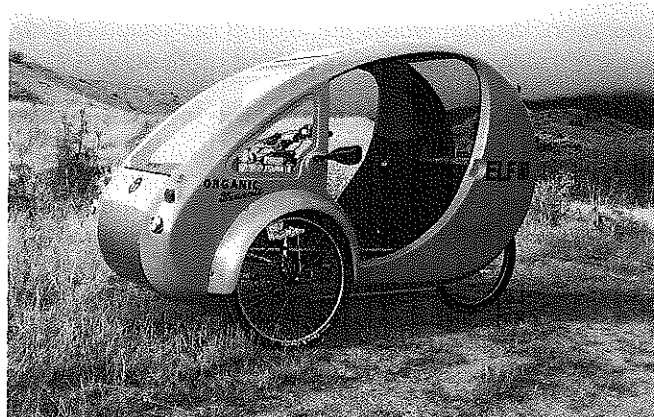
**Home heating.** Fund the retrofit of 5% of VTs homes for energy efficiency every year for 20 years. Couple this with net-zero building codes for new construction; so Vermonters can cheaply heat their homes in winter.

[Aside: since it is hurricane season. Millions in FL have been shocked by their loss of power: no AC, ice and refrigeration: homes are uninhabitable. Imagine they had well-insulated homes, decentralized solar powered grids (it is the tropics!) and efficient heat pumps. Now realize that Puerto Rico and the devastated islands may have no power for months.]

**Transportation** is a big issue for VT, especially commuting, where the average car is a 'single-occupancy-vehicle' getting 25 mpg. You hear a lot about electrification, but just plugin hybrids are a huge first step. I have been driving one for 10 months; and since much of my travel is local, I now average 140 mpg, which is an 80% reduction in fossil fuel use. If we add computerized ridesharing, we could halve this again. The state could creatively push this transition, as it would greatly benefit Vermonters.

**Other big step** is to build or repurpose a paved path network for electric assist cargo bikes and trikes for commuting. Less than a tenth the weight of a 3000lb car, they cost essentially nothing to run on electricity. Enclosed trikes are almost all-weather. Yes, they are half the speed, 25mph instead of 40-50mph; but some exercise means better health, and the quiet means a better connection to the natural peace and beauty of Vermont. Facilitate.

**Illustration: The ELF from Organic Transit**  
(<https://organictransit.com>) Payload 350+ lbs at 25 mph, 100W panel on roof. Extend range with modular battery.



Address to Vermont's Climate Action Commission  
By Sabrina Melendez, 9/21/2017

My name is Sabrina Melendez, and I live in Bennington, Vermont. Thank you for coming out tonight to hear what the people of Vermont have to say about climate change. I can tell you that while I live in Vermont, and while my heart is here within the fall leaves of the maple trees and the rich golden mugs of hot apple cider, I am not a native Vermonter. That is to say, my roots do not extend backwards the 7 generations that it takes to be a native Vermonter. In fact, my roots come from quite a bit away, though still a part of America, in a tiny little island called Puerto Rico. Puerto Rico, as you know, has just been struck by the largest hurricane ever to hit Puerto Rico in all of its recorded history, Hurricane Maria. I have heard back from my dad's side of the family, and they are okay. I haven't yet heard back from my mom's side of the family.

The Caribbean has always had hurricanes. Hurricanes are natural. But this year, the Caribbean has seen three hurricanes the size of which we should only expect to see once every 500 years. Hurricanes intensify in warm water. If we haven't yet felt the effects of a warming planet, it is because the heat is being absorbed by our oceans, which rise dramatically in temperature each year. The longer that we take to make serious policies that reduce our carbon outputs and switch to renewable energy, the more intense our climate will become. These are exactly the kinds of natural disasters that my generation is going to have to deal with, and that is why I am here today, supported by my peers at Bennington College. Young people did not cause this issue, but we will be disproportionately affected by it. Therefore, I am here today as a young person to ask that we get serious about climate change. There are no borders when it comes to planetary climate change. What we do here in Vermont affects the entire planet. It affects my family in Puerto Rico. The steps we need to take are large. It will not be enough to put together a few policies. We need to change our entire relationship with the earth.

But the first, and most basic policy that we can start with, is a price on carbon. I repeat, the first and most basic policy that we can start with is a price on carbon. Climate change does not come at zero expense to the people of Vermont, and the people of the planet. If large corporations responsible for polluting the atmosphere do not understand the value of what we stand to lose, the value of our winters and our maple syrup, of glaciers and wildlife, or our most vulnerable populations who stand directly in the path of large scale natural disasters, then perhaps they will at least understand the value of money. I ask for a progressive carbon price, one that will *help* low-income Vermonters rather than hurt them, and I ask for a carbon price that is merely the starting conversation to a regional carbon price in the greater North Eastern United States. Already, Massachusetts is on the brink of passing a carbon price, and Rhode Island and Connecticut have direct contingency clauses stating that they will pass a carbon price once Massachusetts does so. Vermont needs a regional or a federal carbon price, but we must be the ring leaders in enacting bold climate action. The rest of the country is waiting on us.

My second ask is that we begin to create the infrastructure for democratically owned and operated renewable energies. I spent my summer biking around every corner of Vermont talking to people from southern Vermont all the way up to the Northeast Kingdom, about climate policy. I spoke to many people who were staunchly against wind energy, and what they were saying made sense. It feels invasive when a large corporation plants a ginormous wind turbine beside

your house and reaps all of the profits. In order for our brothers and sisters in rural Vermont to hop on board with renewable energy, we need to give them power over their own energy. I do not want the unfair and unequal wealth and power of the oil industry to simply get handed over to large renewable energy companies. Renewable energy is an opportunity to democratize energy and spread the wealth. I want wind turbines that are owned cooperatively and communally, wind turbines that generate income for struggling communities, money that can fund local farmers and help people rebuild the broken down trailers that they have been living in for decades.

But how, you ask, will low-income Vermonters have the resources to own and manage their own wind turbines cooperatively? A single commercial-scale wind turbine can cost up to 4 million dollars to purchase and install. As it stands currently, only a large corporation has the resources to handle that kind of money. Which brings us to the question--how *does* a large corporation get that much money? From a bank loan of course. Is Bank of America, or Wells Fargo, or City Group, or Goldman Sachs going to loan 20 million dollars to a group of low-income Vermonters looking to start-up their own cooperatively owned wind farm? Will the interest rates be manageable? Not likely. And here is my third suggestion for how to move into a more sustainable future. Vermont needs to set up a public state-owned bank. As it stands now, all of our tax dollars are held in a large, privately-owned bank. Our money is then loaned out to corporations for large scale projects that require large scale loans--often fossil fuel projects like pipelines and oil rigs. If Vermont's tax-payer dollars were held in a public, state-owned bank, that bank, which would not operate within a for-profit model, could then give out large loans at incredibly low interest rates and pave the opportunity for cooperatively owned wind and solar projects. Any interest generated from loans to small businesses, local farmers, and communal renewable energy, would go back into the state to reduce taxes and fund other renewable energy projects in Vermont like weatherizing homes or putting solar panels on parking lots.

Radical climate change policies do not have to compete with economic growth in the state of Vermont. Rather, they are an opportunity to grow Vermont's economy in a more equitable way. As long as large corporations are leading the movement toward sustainability, we will have resistance in this state. We do it small here in Vermont. Rural Vermonters are proud of their independence. Climate change does not have to be an apocalypse. The young people of Vermont are choosing to see climate change as an opportunity to create a more equal economy and a better world for my generation. For now, my future, and the futures of every other young person in this room, rest in your hands. My question to you, will you take climate change seriously? Will you be bold with your solutions? Thank you.

9/21.

# Dan Hibbs's CAC Comments

Hello, thank you for this opportunity,

I am Dan Hibbs, a student at Green Mountain College, a songwriter, and citizen of Vermont. I am concerned about the degradation of natural resources and the natural ecosystems that produce them. I think our consumption of carbon-based fuels is not only oppressive to future generations but is also a source of stagnation in social, technological, and economic, ~~and ~~intel~~~~ advancements of human kind.

Where the rubber meets the road, I'd like to see capital from carbon-pricing be invested in efficient transportation, heating, and electric generation, the areas that will be most affected by carbon-pricing. I ~~think~~ <sup>hope</sup> ~~to~~ <sup>make</sup> ~~it~~ <sup>happen</sup>.

I think the presence of wind mills, and solar panels are minute visual blemishes in comparison to the atrocities of tarsand oil fields <sup>and</sup> ~~their~~ subsequent affects on water and air quality. I'd like to see household electric systems run DC current directly from <sup>solar panels</sup> ~~without~~ <sup>conducting</sup> ~~to~~ <sup>AC</sup>.

Finally I'd like to see more planting of trees in riparian zones, more support of organic farming, and the state of Vermont as a model of sustainability for the rest of the country.

Thank You

Dan Hibbs Jericho, VT

Sept 21. 2017

## Sophia Dantzig CAC Comments

My name is Sophia Dantzig and I am a student at Bennington College. Thank you for coming to Bennington County to hear our thoughts this evening.

I'm here to speak up for Vermont's young people. Every week, Zoe, myself, and a number of other Bennington students mentor children from a nearby affordable housing neighborhood as part of the DREAM program.

Those kids deserve to grow up in a world free from pollution.

I want you and your fellow commissioners to keep big businesses accountable for what they're doing to our state so that Vermont stays beautiful for generations to come. Please, put a price on carbon emissions.

Thank you.

# Stevie Martinez-Farias CAC Comments

\* Sea surface temperature → major driver of worldwide activity

Good evening, my name is Stevie Martinez-Farias and I'm from Bennington College, I want to thank you all again for being present here. I am speaking up because my family is one of the thousands that were affected by the destructive, 7.1, earthquakes that occurred in Mexico. I am speaking for putting a price on carbon emission because this is a step closer to our future, <sup>improving</sup> the health of a nation, and the hope for a different and a more beautiful world. We are not talking about a short term policy but a long term affect for the better. Thank you for the opportunity of being here.

^ The evidence is clear  
and climate change is very real  
and we need to bring awareness  
to it now before ~~it's~~  
it's too late



## Jen Lalor CAC Comments

My name is Jen Lalor from Manchester. I'm a local teacher, parent, and member of MoveOn Manchester. Thank you for being part of this important commission and for doing the work necessary to help find the best solutions to our climate crisis. I'm honored to live in a state where this is being taken seriously and many are joining the effort to bring about much needed change. I teach my students that climate change is one of the most threatening issues facing our world today, and that we must act now or it may be too late. I believe that carbon pricing is our best option to both reduce greenhouse gas emissions while also helping Vermont's economy. This is an urgent crisis that calls for more aggressive measures. Putting a price on carbon is my recommendation for moving forward in the most viable way. We can't wait any longer.

Again, thank you for being here and giving me the opportunity to share my opinion.

# Barbara True-Weber CAC Comments

Addressed to the Governor Scott's Climate Action Commission. A Proposal  
for a Cabinet Level Office of Climate

We can't afford to simply wait and see what the weather brings us. We know what the dangers are: storms, diseases, fires, and agricultural interruptions. It is estimated that under the best circumstances our climate/weather will approximate eastern Ohio and with it, changes in our economy that depends on skiing and maple trees, tourism. We know that every part of our lives are in line for chaos and disruption. We know our children and grandchildren will have radically different lives than we had. Let's seize the opportunity to act with propose and resolve rather than react in the midst of upheaval.

**I propose the Governor/legislature create a cabinet level office of Climate Change.** This office would analyze the science and technology that is associated with climate issues and address the problems, not as they arise, but in preparation. This new cabinet office would coordinate across departments to anticipate problems and propose solutions. The office would work to create new renewable energy jobs, would oversee the reduction of carbon emissions (perhaps administer a carbon tax), but also plan for mitigations and adaptation to climate change.

If we do what is required we can transform the economic foundations of a society that is based on fossil fuels and profiteering. We will create a society that has better health, social justice, and a sustainable economy. We will fashion communities of opportunity and neighborhoods of possibilities. Let's plan out of hope and ambition rather than ignore reality in fear and anxiety.

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Pownal VT 05261

# Karen Lee CAC Comments

KAREN LEE

ARLINGTON

802-375-6462

sdarprovermont@gmail.com

HUMANS SUFFER FROM INERTIA.  
UNLESS PEOPLE ARE FORCED TO MAKE  
CHANGES TO THEIR COMFORTABLE LIFESTYLES,  
THEY WILL BE COMPLACENT AND LAZY.  
NOT ALL PEOPLE SUFFER FROM THE  
SICKNESS OF COMPLACENCY BUT OVERALL,  
THE VAST MAJORITY DO NOT CHANGE  
UNTIL FORCED TO DO SO. FOSSIL FUELS  
ARE TOO INEXPENSIVE. A CARBON  
TAX - AN INCREASE IN THE COST OF  
FUEL & GASOLINE - WILL FORCE PEOPLE  
TO CHANGE. A PRICE ON CARBON  
POLLUTION IS VITAL! POLITICAL  
COURAGE IS NEEDED TO SAVE OUR  
OVERHEATING PLANET!



Several months ago President Trump made the ill-conceived decision to withdraw the United States from the Paris Climate Agreement. In doing so, the President argued that he was protecting the American economy. In reality, his actions will keep our economy stuck in the polluting energy system of the past. We all know the future must be different. As the leader of an institution committed to environmental, social and economic justice, I have the good fortune of seeing a brighter tomorrow come alive in the ideas and actions of my students. For these students no challenge, including climate change, is too great. That's why I said yes when students asked me to sign a letter endorsing a price on carbon pollution. This week many of these same students will be turning out to make the same request of Vermont's governor

Following the withdrawal of the US from the Paris Agreement, I was pleased to see that Governor Phil Scott was one of over a dozen governors to step up and signify his intent to honor the goals of the agreement. One of his first executive actions after making this declaration was to form the Climate Action Commission. The stated goal of the Commission is to develop solutions that reduce our climate polluting emissions while strengthening our economy and ensuring every Vermonter is included in the clean energy transition. The Commission comes to Bennington County this week for a public listening session and many students from GMC will be there offering their own ideas.

My recommendation is a simple market-based solution that is already reducing carbon emissions in 40 countries and more than 20 cities, states, and provinces around the world. It's a solution that is already partially implemented in Vermont and eight other states through the Regional Greenhouse Gas Initiative (RGGI), which has reduced climate polluting emissions from power plants, invested in efficiency, and improved public health outcomes. It is of course not the *only* solution, but it's one that has the opportunity to make an impact here in Vermont and serve as a model for other states looking to do their part to tackle the climate crisis. That solution is a price on carbon pollution.

In the absence of leadership from Washington D.C., it's time once again for Vermont to step up. Carbon pricing represents a great opportunity for the governor and the legislature to develop a bipartisan approach to one of today's most pressing challenges: pricing pollution to fund the solutions.

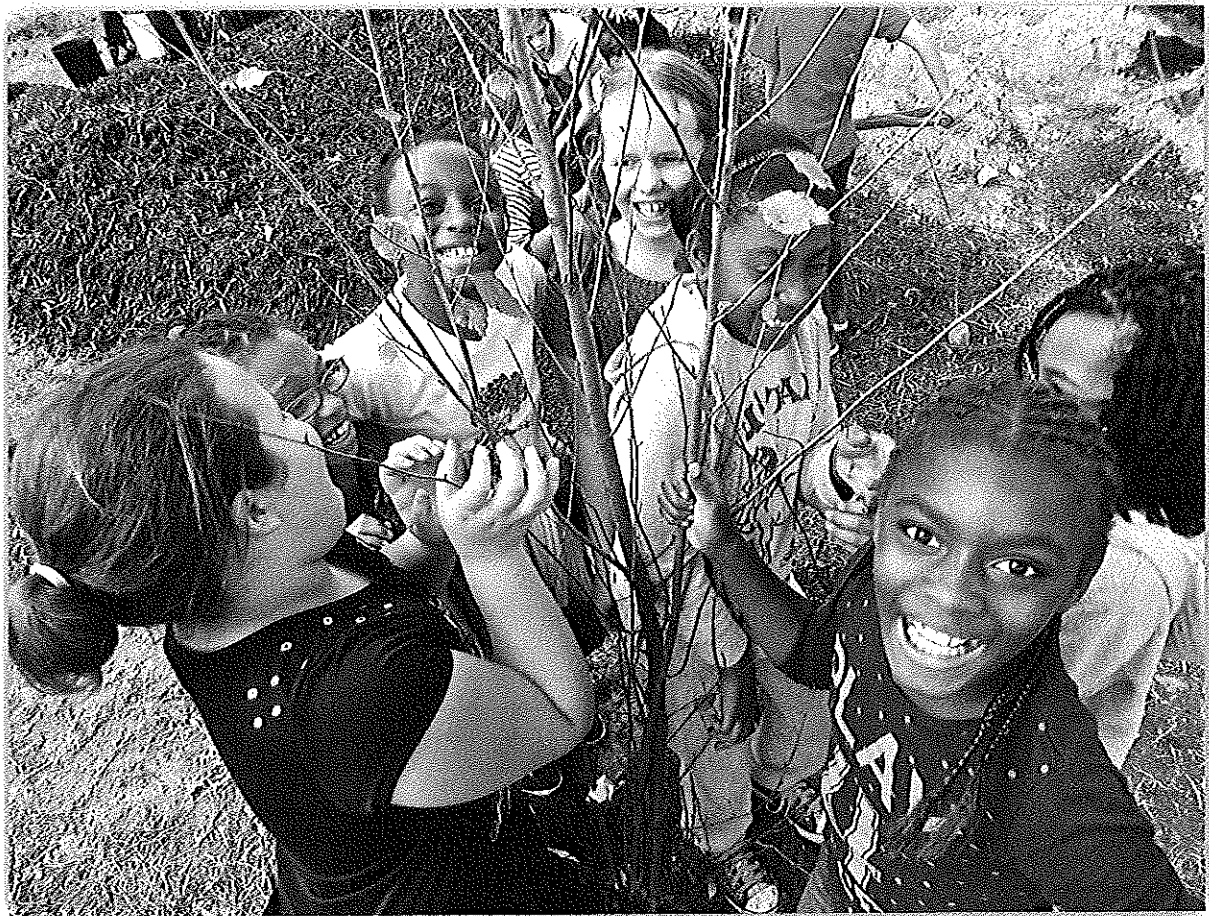
I'm proud to endorse carbon pricing as an opportunity for Vermont to move beyond the outdated and dirty energy systems of the past. The Governor and the Vermont legislature must work together to craft a carbon pricing policy that meets the commission's goal of strengthening our economy and including every Vermonter. An equitable solution that protects the most vulnerable in society appears to be the best way forward. This will require creative thinking and compromise but that is the essence of good leadership and if our elected leaders need help in that regard, they need look no further than the students of Green Mountain College.

I am proud that so many of our students are speaking out – with passion, creativity, and optimism. They are urging Governor Scott and the legislature to take bold action and so am I.

# *Eco-Schools USA*

# Handbook

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(Revision 1 – July, 2017)

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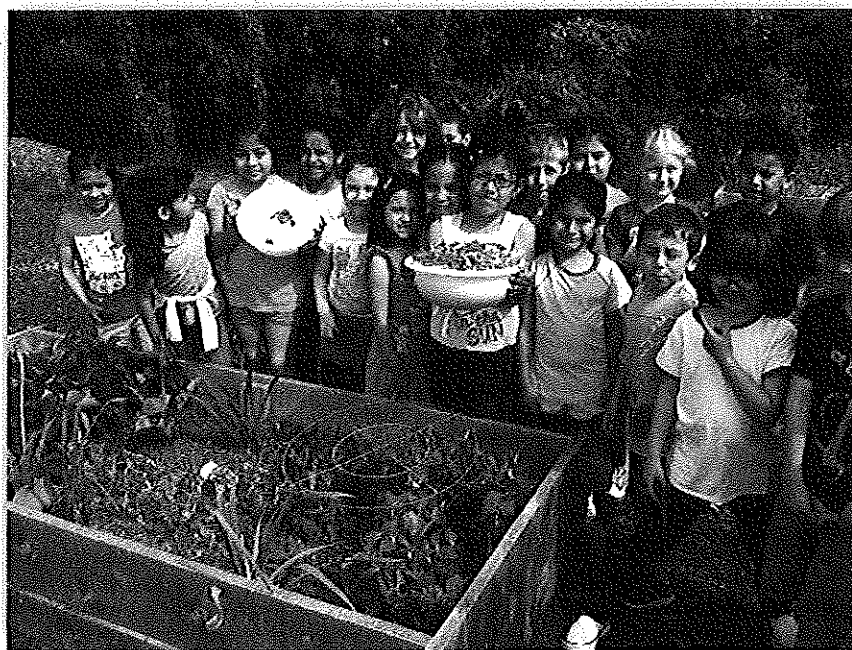
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## Welcome and Introduction

### The National Wildlife Federation's Role in Environmental Education



The National Wildlife Federation (NWF) is a leader in conservation and environmental education among America's major conservation groups. We began educational programs for children in the 1950s and now have school greening programs in over 9,000 Pre-K-12 schools. Moreover, we work directly with 1,000 higher education campuses through our Campus Ecology program; we are a leader, via our *Ranger Rick* brand, in wholesome children's education publishing; and we are on a campaign to provide 10 million kids with regular time outdoors learning and playing in nature through partnerships with schools, public agencies and local and regional park departments.

NWF's Pre-K-12 educational programming provides hands-on, experiential and authentic learning experiences for young children and youth. We believe that learning happens most powerfully when people are deeply involved with the natural world, their communities, and one another. We provide students and educators with hands-on, minds-on, practical and authentic learning experiences and academically challenging programs that employ experiential learning strategies. We are metrics driven and measure results in terms of environmental outcomes, environmental education advancement, and overall academic performance and behavior of students engaged in our programs.

### What is the NWF Eco-Schools USA Program?

NWF's Eco-Schools USA program is a nationwide program that engages Pre K-12 school students, faculty, administrators and community volunteers in a comprehensive, environment-based program to improve student environmental literacy and skills. The schools themselves become greener and cleaner and students learn more science and technology. The Eco-Schools USA program now serves over 4,700 U.S. schools, 2.7 million students, over 130,000 educators, and is growing.

The Eco-Schools USA program focuses on greening existing school buildings, school grounds, curricula, and the student experience. In addition to direct environmental benefits, the program helps to dramatically improve student skills in Science, Technology, Engineering and Math (STEM). It is also a proven framework for promoting youth leadership and community service. Roughly two-thirds of the participating schools are in low income urban areas and approximately 45% of participating students are from diverse racial and cultural backgrounds. As of early 2016, virtually every major urban area in the U.S. has active Eco-Schools. The Eco-Schools USA website has an [interactive map](#) that shows locations and distribution of participating schools.

Eco-Schools USA is part of a larger global network of over 51,000 green schools in 62 nations. The Eco-Schools effort was originally launched in 1994 as an outgrowth of the 1992 Rio Environmental Declaration. Its global coordinator, the Foundation for Environmental Education (FEE), is based in Denmark and each participating nation has its own non-governmental organization operator. During its first decade of existence, the Eco-Schools program prospered in Europe and, in the past five years, has expanded to other major nations including Australia,





Brazil, China, India, Japan, and Russia. The United States joined the program in 2008 and NWF is the sole designated host and operator in this country.

Twenty years of testing and growth have helped the Eco-Schools program to hit on all cylinders. The program produces results that can be measured in energy and water saved, reduced solid waste and food waste, improved indoor air quality, new school gardens and new outdoor classrooms, and more. In 2015, for example, participating U.S. schools saved \$65 million on their utility bills through a variety of low-cost and no-cost means. The Eco-Schools platform also lets educators use these improvements as learning opportunities for youth. Student/faculty teams conduct audits of water and energy use, indoor air quality, solid waste, and landscaping and develop action plans to make improvements. These become part of the school's educational programming.

In addition to environmental education benefits, teachers find profound linkages between STEM education and student learning of environmental subjects. Both offer hands-on learning opportunities and support inquiry-based education, critical thinking, use of technology and problem solving. This will become more important as states, such as California, New York, New Jersey and many more implement the newly-released Next Generation Science Standards.

The Eco-Schools program also helps orient students to a more sustainable future and careers. The program is based on a simplified version of the ISO 14001 environmental management process framework. Schools form school-wide teams, conduct audits, and develop action plans. This exposes them to "green" career paths, and facilitates their transition to higher education, the workplace, and adult life. As schools implement their plans, progress is measured and this helps them reach specific school-wide award levels – Bronze, Silver and Green Flag. In sum, Eco-Schools USA supplies a seven-step framework that provides a core structure for learning opportunities at schools. The seven steps, covered in more detail later in this handbook, are to:

1. Establish a student-driven Eco-Action Team.
2. Perform an environmental review assessment.
3. Develop an Eco-Action Plan.
4. Monitor and evaluate progress.
5. Link to educational curriculum.
6. Involve the entire school and larger community.
7. Create an "Eco-Code."

The NWF Eco-Schools USA website is designed to be self-guiding and to make participation in the program easy for educators. The site offers a rich array of environment-based curricula, educational content, and best practices from decades of working with schools and educators. Most of these resources are available at no cost to schools and the Eco-Schools USA program, itself, is a free program.

## How Does Eco-Schools USA Benefit Your School?

Eco-Schools USA is a holistic program. It strives to make environmental awareness and action an intrinsic part of the life and culture of a school, including students, teachers, administrative staff, non-teaching staff, parents, and the local community. Eco-Schools USA works to extend learning beyond the classroom and develop responsible environmental attitudes and commitments, both at home and in the wider community.

### NWF's Eco-Schools USA Gets Results!

#### NWF Eco-Schools USA: Real Sustainability Benefits

Becoming an Eco-School has enhanced our efforts to teach students how their actions impact the world around them and has helped them learn how they can individually and collectively make a difference.

Dr. Scott Poole, Lanier MS

Involves educators and students from diverse racial and cultural backgrounds

**▲ 67%**

Participating schools qualify as Title I or receive free/reduced lunch subsidies

**★ \$50,000,000**

Amount saved in energy by participating schools

**● 30%**

Reduction in solid waste (paper and cafeteria waste) streams

Whether public, private, charter, magnet, or home school, the NWF Eco-Schools USA program gets results. Our schools are engaged, active, and motivated, and the students are becoming more environmentally literate through hands-on, experiential, and project-based learning that turns the school buildings and grounds into true learning laboratories.

Beyond the actual cost savings to the school and district, Eco-Schools USA has a critical impact on student learning and health as well. Schools report the following improvements from our most recent survey:

Increased student engagement

Improved reading abilities

Improved math skills

Better understanding of science concepts

Improved technology and engineering skills

Increased participation in science and nature activities









Improved school attendance

Increased student/staff physical activity

NWF launched the Eco-Schools USA program in 2009. Since then, our growth has been impressive and there are over 4,600 schools nationwide today. We also have state partners in Maryland, Kansas, Oregon, Pennsylvania and Wisconsin who help us to deliver the program to schools in those states. The program is free to any participating school.

### Financial Benefits to the School

There are many ways that schools and districts benefit financially from participating in the NWF Eco-Schools USA program. Each year, NWF surveys its participants to determine if schools are realizing financial savings due to the program. Schools report savings in the areas of energy, water, waste, and carbon footprint. Metrics are gathered through the NWF Eco-Schools USA school “dashboard” -- an online metric gathering portal that allows schools to measure their progress. Some typical savings and school stories are as follows:

	<p><b>20-40</b> %</p> 	<p>Using the Eco-Schools Energy Pathway, students at <b>William Annin School in Bernards Township, NJ</b> investigated ways to conserve energy at their school. In addition to making small changes, like swapping out old light bulbs for new, energy efficient bulbs, the school also installed solar panels. A large monitor in the school hallway now displays their energy saving results for all to see.</p>
	<p><b>10-30</b> %</p> 	<p><b>Savannah Country Day School, GA</b>, the first Eco-Schools USA Green Flag school, has a 2,000-gallon cistern that collects 50% of the rainwater from the roof of the school’s main building. Water from the underground cistern is put to use in a number of ways, such as filling the stack pond which is home to fish and turtles. Students learn about water conservation as they calculate how many gallons of water are in the cistern at different times throughout the year.</p>
	<p><b>10-30</b> %</p> 	<p>With 100% school participation and using the School Improvement Plan, <b>Churchill Road Elementary, VA</b> was able to reduce their lunch waste by 90%. Thanks to their innovative approach, all non-used food from the cafeteria now gets redistributed to local food banks. The school went from 300 pounds of cafeteria waste per day to just 30 pounds each day!</p>
	<p><b>10-30</b> %</p> 	<p>Collectively, participating NYC Eco-Schools prevented the release of more than 300,000 pounds of carbon dioxide into the atmosphere. These schools participated in the Eco-Schools USA “Cool School Challenge” and tracked their carbon emission savings through energy, water, HVAC, waste, and transportation improvements and behavior changes.</p>

### Student Academic Achievement

Research has shown that students of all economic, racial, and cultural backgrounds that are engaged in hands-on, applied and real-world aspects of environmental education have an increased desire to learn and perform better on most measurements of student success. Educators today are also finding it harder to attract, retain, and interest students in STEM disciplines. Using the environment as an integrating context, we call this our Green STEM programmatic approach. Green STEM supports inquiry-based learning; places scientific and technical learning in a real world context; and encourages hands-on, project based learning and application of knowledge. Green STEM improves academic performance, especially in science and math, and encourages student environmental awareness, stewardship and leadership.

In addition, today's students need to develop 21st Century Skills to prepare for success in their chosen career paths as they age. These skills are broken down into three categories:

21ST CENTURY SKILLS		
Learning Skills	Literacy Skills	Life Skills
Critical Thinking	Information Literacy	Flexibility
Creative Thinking	Media Literacy	Initiative
Collaborating	Technology Literacy	Social Skills
Communicating		Productivity
		Leadership

The NWF Eco-Schools USA program utilizes the Project-Based Learning (PBL) teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an engaging and complex question, problem, or challenge that is local in nature. Following the Eco-Schools' Seven Step Framework, students lead the Eco-Action Team, they perform the school's Environmental Audit, they develop the Action Plan, and Monitor and Evaluate their progress towards goals over time. All of the actions they take are linked to the curriculum, and they use their student voice and choice to engage the greater school Community. Finally, they make their work public by developing an Eco-Action Code and presenting it to the school and broader community. Each step helps to build student confidence, communication, and collaboration skills, while at the same time allowing them to think creatively and critically about environmental or sustainability challenges at their school and develop place-based solutions. In this way, students develop the necessary 21st Century Skills as well as develop an affinity for the STEM disciplines.

## **Don't just take our word for it – here's what members of the school community are saying about various aspects of our program!**

*"As a 2nd grade teacher, part of our science curriculum is the life cycle of a butterfly. Having a butterfly garden right here on campus has allowed me to connect my curriculum with my students' real life experience and provide a greater depth of understanding for my students."*

- Melissa Eads, Patton Elementary School, Austin ISD

"Eco Schools' Green STEM workshop was by far one of the best professional learning sessions of my career! Although I do not have a math or science background, I walked away with practical ways to integrate STEM into my units of study in Reading, Writing, Science and Social Studies. I can't wait to turn my 5th graders into lead oil spill containment and extraction researchers."- Wendy Poveda, PS 132 (Manhattan)

**"Children are learning by doing. This has been an invaluable experience for them."** - Oliver Barron, Patton Elementary School, Austin ISD

*"Environment-based education offers a platform to provide breadth and depth to all aspects of the curriculum. All students are involved with inquiry learning as they investigate various aspects of each discipline to study. Students grow crops based on their curriculum, making learning come alive. We use the outdoor classroom to "do science," not just read about it. Our students are passionately learning, utilize all five senses to achieve education goals. These goals will take these students into the future."* - Don Hutzler, Principal, Churchill Road Elementary

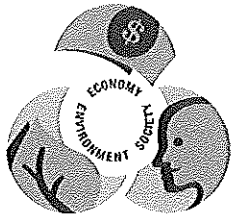
## The Meaning of the Eco-Schools Logo

In 1994, FEE France, one of the first Eco-Schools programs, organized a competition in a school of graphic arts to create a logo for an environmental program related to school and based on the active participation of students. The winning design became the logo for the Eco-Schools program worldwide. A lot of meaning is packed into this image. Here is what it symbolizes:

- People are the basis and center of the program. In our hands lies the greening of our future, which is symbolized by the flower flourishing above the head of the central person.
- The flowers symbolize both the flourishing of the environment that we can promote, and the flourishing of human beings who will be enriched by developing values and attitudes that protect our environment and ourselves.
- Once this bouquet of green flowers is open over our heads, it turns into a kind of umbrella, a shelter that protects us.
- The book is associated with school and knowledge, but the two separate pages (with the person in the middle) mean that this knowledge is not purely academic. Books only contribute to the change in behaviors, while teaching/learning and people are central.
- The blue page on the left represents the book of human history, loaded and heavy with the problems of society we are facing and inheriting. This part of the book is already written.
- The white page on the right is not yet written. It represents everything that can be done - and we alone decide what our future will be.



*Eco-Schools National Operators Meeting in Belfast, Northern Ireland, Nov. 2015  
(photo credit Anna Tramarin)*



## Education for Sustainable Development

*Economy | Society | Environment | Equity | Relationships | Social Justice  
Local | Community | Global Change | Action | Partnerships | Resilient*

Sustainable Development<sup>1</sup>— “Development that meets the needs of the present while safeguarding Earth’s life support system, on which the welfare of current and future generations depends.”

Griggs et al. (2013)

Because of the urgent need for citizens to understand the concepts of sustainability, *Education for Sustainable Development* or *Sustainability Education* has become a strong focus worldwide. Sustainability education is a framework that can be used to engage students in all subjects by using the real-world as the vehicle to understanding and actively participating in the complex interconnections between the creation of vibrant communities, strong economies, and healthy ecosystems, both locally and globally. Education forms the foundation for building sustainable communities, and without education we cannot achieve sustainability.

Equity, Environment and Economics Registered Eco-Schools are working toward becoming more sustainable, and are investigating and implementing sustainable development goals. Eco-Schools USA work to link the three interconnected elements of sustainability (social equity, environmental health and economic prosperity) on a local, national and international level. Systems thinking underlies the 7 Step Framework and Pathways to



<sup>1</sup> After a long series of intergovernmental negotiations on various themes, which saw a broad participation from major groups and civil society stakeholders under the guidance of the United Nations State Members, the Goals were adopted on September 25, 2015 at the New York United Nations Summit by 193 Member States. UN Member States, the civil society and private sector contributors will use this new, universal set of goals, targets and indicators to guide development global efforts over the next 15 years in a concerted international action with the broadest, most ambitious development agenda ever agreed upon at the global level.

Sustainability that make up the Eco-Schools USA program. As schools take steps to improve their environmental performance, such as through reducing energy consumption or creating wildlife habitat on the school grounds, these steps become a focus of the curriculum, a focus throughout the school and a focus within the community. Students experience the integration of learning and meaning and power behind their action. Each Eco-Schools USA Pathway to Sustainability provides an opportunity for students to work together to solve authentic issues.

Partners in Sustainability Education  
 Several key partners of Eco-Schools USA have comprehensive programs, resources and professional development opportunities that you can utilize to develop strong sustainability education curriculum and programming.

Green Living Project | The Cloud Institute for Sustainability Education | Sustainable Schools Project  
 Children's Environmental Literacy Foundation | U.S. Partnership for Sustainable Development

Center for EcoLiteracy | Global Environmental Education Partnership (GEEP) | Shelburne Farms

The 17 Goals and 169 targets are meant to be action-oriented, concise and easy to communicate, aspirational, global in nature and universally applicable to all countries, while taking into account the different national realities, capacities and levels of development and respecting national policies and priorities.



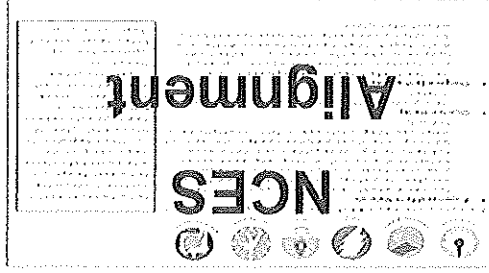
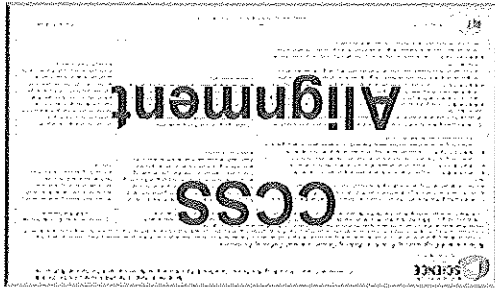


In the United States our standards for learning drive our students' classroom experiences. Successful learning looks different in every classroom and for every student and the strategies we use to engage students and move them forward are just as diverse.

As educators we are constantly retooling our practice, looking for ways to reach each and every child, and environment-based education is one such learning experience that can be a transformative experience for both the teacher and his or her students.

In an effort to support your classroom instruction using environment-based education, Eco-Schools USA has aligned their program to the Next Generation Science Standards (NGSS), the Common Core State Standards (CCSS), and to the National Science Education Standards (NSES).

# NGSS Alignment



## Green STEM Initiative

*Environment-Based | Science | Project-Based Learning | Technology | Rigorous | Engineering | Integrated  
| Mathematics | Student-Centered | Design Process*

STEM is an acronym for Science, Technology, Engineering and Math education. We focus on these areas together not only because the skills and knowledge in each discipline are essential for student success, but also because these fields are deeply intertwined in the real world and in how students learn most effectively. STEM is an interdisciplinary and applied approach that is coupled with hands-on, problem-based learning.<sup>2</sup>



*Children have an innate love of nature; by showing students their STEM skills can protect our natural world, students become passionate learners.*

Research shows that students are more motivated to learn and do better in school when they feel their learning is connected to a larger purpose.<sup>3</sup> The environment can be a compelling context for teaching STEM. Students who may not otherwise be enthusiastic about STEM disciplines become inspired and often passionate about exploring the many real-world issues that environment-based education offers, from designing local recycling solutions to addressing global fresh water shortages. Green STEM provides them with a realistic context and connection to STEM subjects that they can embrace and take action on to make a difference in their own neighborhood or in the larger world. For students already enthusiastic about STEM subjects, Green STEM offers an opportunity to take their skills to the next level by engaging in a variety of service learning projects in their communities such as,

creating a green roof to mitigate storm water runoff, or a pollinator garden to help imperiled wildlife. Such projects can have a range of real-world benefits, connect students with a range of interesting community partners from horticulturalists and wildlife ecologists to urban planners and architectural engineers, and introduce them to innovative green career opportunities.

Download our [Green STEM Guidebook](#) to learn more about this topic. Teachers can also learn to design their own Green STEM learning experience through our on-line, self-paced [professional development course](#) that accompanies the Green STEM Guidebook

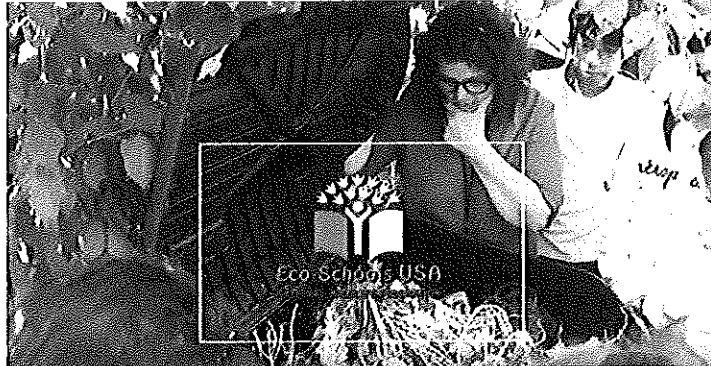
<sup>2</sup> California STEM Learning Network, <http://www.cslnet.org/our-agenda/what-is-stem/>.

<sup>3</sup> MindShift: How a Bigger Purpose Can Motivate Students to Learn, <http://www.kqed.org/mindshift/2014/08/18/how-a-bigger-purpose-can-motivate-students-to-learn/>

## How to Become an NWF Eco-School

Congratulations! You've taken the first step in becoming an Eco-School. Watch this short video for an overview of the NWF Eco-Schools USA Program.

Through school-based action teams of students, administrators, educators and community volunteers, Eco-Schools USA combines effective "green" management of the school grounds, facilities and the curriculum.



Schools that are certified in the program undergo a thorough application process and succeed in organizing and implementing a comprehensive assessment of their school. The Eco-Schools USA program is made up of seven steps, incorporating 12 environmental pathways that students can address in an effort to create a more sustainable learning environment.

Once a school has registered and implemented these seven steps, they can apply for an Eco-Schools award. There are three levels of the award system. The first two levels are the Bronze and Silver awards which are self-assessed. The most prestigious Eco-Schools award is the Green Flag. The Green Flag must be assessed by our staff or an Eco-Schools USA on-the-ground partner and renewed every other year.

On the next four pages, we've laid out an easy path for you to follow. You'll find more details for each step later in this handbook. Along the way, we have a number of resources that can help you make the most of your NWF Eco-Schools USA experience.

*The NWF Eco-Schools USA Handbook.* We recommend you start your Eco-Schools USA journey by looking more closely at the handbook and brainstorming how the Eco-Schools USA program will be established at your school, with your students and in the community.

*NWF Eco-Schools USA Website.* Visit our website. There you will be able to log in and update your dashboard, apply for awards, find links to helpful resources and much more.

*Online Newsletter.* We publish a newsletter 10 months of the year, so be sure to visit our website monthly to catch up on the latest news and find helpful resources. Consider signing up for our emails on our website, and receive timely news and information delivered directly to your inbox.

*Social Media.* Follow us on both Facebook, Twitter (@EcoSchoolsUSA), and Pinterest, where we share inspirational stories, resources and the latest news in environmental education.

*Toolkit:* At the end of this handbook, we've included links to many of the documents you'll need as you journey through the Eco-Schools pathways.

**REGISTER  
YOUR  
SCHOOL.  
IT'S FREE!**

### Register Your School

Now that you are ready to join the Eco-Schools community, registration is easy – and free! Just enter your school's zip code or school name on our Join for Free page to find your school.

If your school is already registered, you can select your school and provide updated contact information and you will be added as a user to that school. If you don't find your school listed, simply click, "My school is not listed here", and you will be sent to a page where you can add your school's information.

We understand that sometimes there are several point people at a particular school. If you would like to grant access to your school's information and profile pages to additional colleagues, you can add them later from the "Manage team" page. You will need to provide their name, email and telephone number. Once added, they should receive an email from Eco-Schools USA confirming their registration.

Don't have your school's login information? [Email our team for help.](#)

The screenshot shows the top navigation bar of the Eco-Schools USA website. It includes the National Wildlife Federation logo and tagline "Inspiring Americans to protect wildlife for our children's future". Navigation links include "WHO WE ARE", "WHAT WE DO", "WHERE WE WORK", "HOW TO HELP", "NEWS & BLOGS", "PHOTOS", and "WILDLIFE". Below the navigation is a banner with icons for "Eco-Schools USA", "calling all", "eco-schools", and "EPA".

The main content area is titled "Join for Free!" and contains the following text:

Ready to join the Eco-Schools community? Registration is easy – and free! Just type your zip code and/or school name and our database will provide a list of schools with a matching name or zip. If the correct match appears, your school is already registered. Simply click "Select" next to your school's name. Proceed with providing your contact information and you will be added as a user to that school.

If you don't find your school listed, simply click "My school is not listed here" and you will be sent to a page where you can add your school's information.

We understand that sometimes there are several point people at a particular school. If you would like to grant access to your school's information and profile pages to additional colleagues, you can add them later from the "Manage Team" page. You will need to provide their name, email address, title, and phone number. Each additional contact person will receive an email from Eco-Schools USA saying that they have been registered.

Don't have your school's login information? [Email](#) the Eco-Schools USA team for help.

Please enter your school's zip or school name to find your school. If your school is not found, you can create an account for your school.

Below the text is a search form with two input fields: "School Name" and "Zip Code". The "Zip Code" field has a note below it that says "Zip Code must be a number". There are "Search" buttons next to each field, and an "OR" separator between them.

**FOLLOW THE  
7-STEP  
FRAMEWORK**



*eco-action team*

**Establish an Eco-Action Team**



*environmental audit*

**Conduct an Environmental Audit**



*eco-action plan*

**Develop an Eco-Action Plan**



*monitor and evaluate*

**Monitor and Evaluate Progress**



*link to curriculum*

**Make Connections to the Curriculum**



*involve the community*

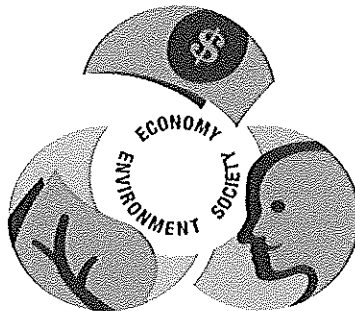
**Engage the Whole School and Community**



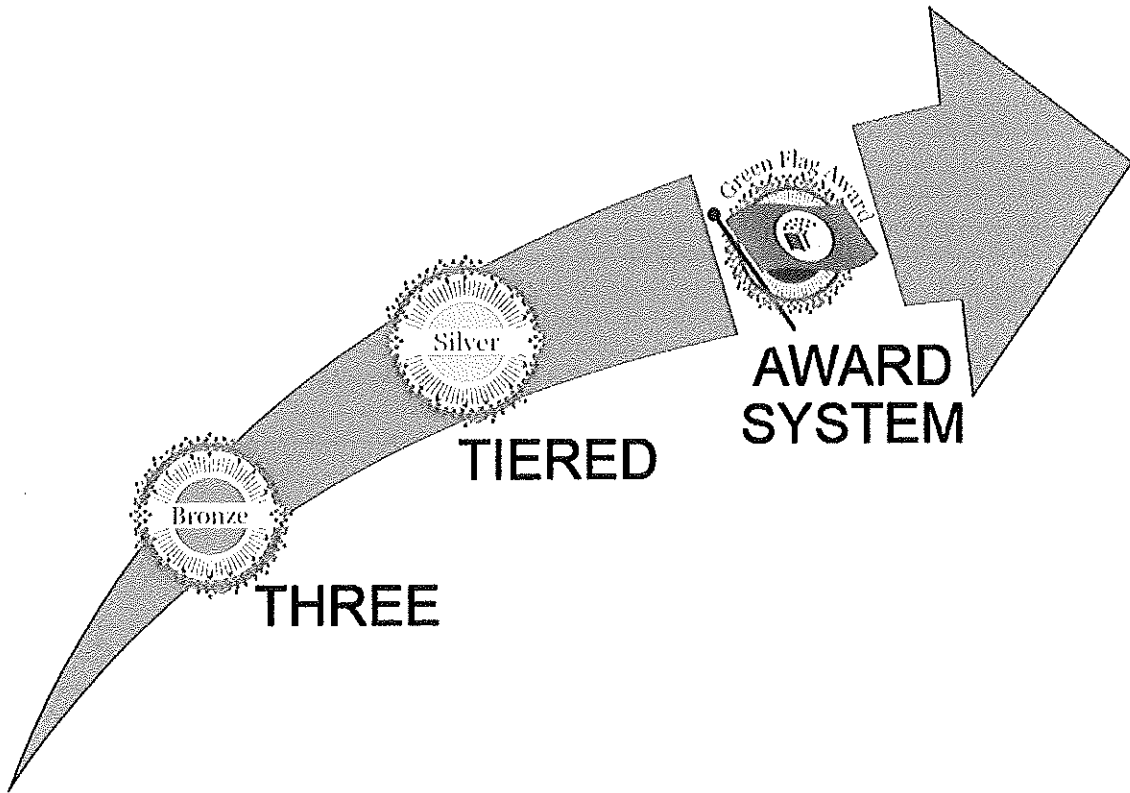
*create your eco-code*

**Create an Eco-Code**

CHOOSE A  
PATHWAY



APPLY FOR  
AN AWARD



## Dashboard


Once your school has registered, you can begin to add information to your dashboard. The dashboard will help you track your Eco-Schools progress. First, login to get to your own profile page. You can then edit your profile by selecting "Edit your Profile" from the right side navigation. Examples have been provided from a few of our Eco-Schools to help visualize what a school dashboard might look like.

### Benefits of Using Your Dashboard.

- Facilitate collaboration with other schools
- Demonstrate progress toward goals
- Show potential grant funders the school's achievements
- Share goals and progress with the families of the school community and community at large




*This sample shows basic information, including goals and awards specific to your school. Information, pictures and videos you have uploaded will also appear here.*

## Belvedere Elementary School



**Type:** Public  
**Location:** Falls Church, VA  
**Primary:**  
**Registered:** 2011  
**Phone:**

**Our School Has Reached This Award Level!**







**We Are Working Toward A:**

**Points Earned Toward This Goal:**

[Learn more about how schools earn points](#)

**We Have Addressed These Pathways:**

**Our Achievements**

**2012**

Establishing a wildlife habitat at the back of the school grounds for the Bronze.

**Our Goals Right Now:**

Our 2015-16 goals include growing enough food in our gardens to donate to a food bank; reducing our waste, and continuing to expand the native plant biodiversity on our grounds.


**Coollest Thing Our School Has Done:**

We transformed an all-turf courtyard into an outdoor classroom with native plants, decomposition and pumpkin gardens, permeable patio, and covered tables.

**Interested in Volunteering?**

Learn more about us at [greenBELVEDERE.wordpress.com](http://greenBELVEDERE.wordpress.com). If you are interested in gardening, maintaining trails, monitoring bluebirds, or can donate tools, seeds and soil/mulch, please contact Belvedere environmental educator Stacey Evers at [severs@fcp.edu](mailto:severs@fcp.edu). Thank you for your interest!

**National Recognitions**





***This sample shows the results of the data you will collect and input behind the scenes.  
This part of your dashboard takes data that is abstract to most students and  
even adults and puts it in a concrete format that's more easily understood.***

### Waste & Consumption

Our school has reduced our trash  
by 1500.00 lbs since we started.

If the majority of the waste is paper, that's  
equal to 22500 trees saved!



[Learn more about the Consumption & Waste Pathway](#)

### Schoolyard Habitats®

On average, each student  
spends 60 minutes learning outside each  
week.

Students at your school spend 3% of their  
school time outdoors each week!

[Learn more about the School Grounds Pathway](#)



### Healthy Living

Average recess period for our students  
is 25 minutes.

That's equivalent to the time it takes to  
leisurely walk 1 miles!



[Learn more about the Healthy Living Pathway](#)

### Biodiversity

Our school's biodiversity index is .5.

This means that our school's biodiversity  
index is Average.

[Learn more about the Biodiversity Pathway](#)



### Healthy Schools

25% of our school cleaning products are  
certified as green.

Your school has a Green Bean  
(low) green cleaning supplies rating!



[Learn more about the Healthy Schools Pathway](#)

### Sustainable Food

5% of food served in our school is  
produced locally.

Your school has a Green Bean  
(low) locavore rating!



[Learn more about the Sustainable Food Pathway](#)

### Here's a look behind the scenes.

This screen shot shows how metrics are input into your dashboard:

Water	
1. On average, how much has your school's water usage decreased per year? (This info can come from comparing the school's monthly water bills) (Enter # of gallons)	<input type="text"/>
2. What's the name of your local watershed?	<input type="text"/>
<a href="#">Learn more about Water pathway</a>	

Transportation	
1. Roughly, how many more students travel to and from school by walking, biking, or carpooling than did before you took your baseline data? (Enter a #)	<input type="text"/>
2. Does your school have a "no idling" policy for buses and cars? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<a href="#">Learn more about Transportation pathway</a>	

Consumption and Waste	
1. By how much has your school reduced trash/waste since collecting its baseline data? (Enter # of lbs. by subtracting baseline totals from post-audit totals)	<input type="text"/>
2. By how much has your school increased recycling since collecting its baseline data? (Enter # of lbs. by subtracting baseline totals from post-audit totals)	<input type="text"/>
3. Does your school compost? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<a href="#">Learn more about Consumption &amp; Waste pathway</a>	

Points Accumulated:
<b>80</b>
Total Points needed for this award: 200

### Dashboard Tips and Helpful Hints

- Save often
- Use the Eco-Action Team to develop a dashboard update schedule and, if appropriate, let students make the updates.
- Ensure all students pictured in photos and videos have media releases on file.
- If adding video, use the iframe code to embed content.

Share this video	<b>Embed</b>	Email	Hangout G
<pre>&lt;iframe width="420" height="315" src="http://www.youtube.com/embed/uH85mFmU5o" frameborder="0" allowfullscreen&gt;&lt;/iframe&gt;</pre>			
Video size: 420 x 315			

- Please email us at [eco-schoolsusa@nwf.org](mailto:eco-schoolsusa@nwf.org) with any dashboard issues and we will work with you to address the problem. Helpful information to include in your email: school name, web browser used (Google Chrome, Firefox, etc.), and a screen shot of what's happening along with your explanation of the problem.

## The Seven Step Framework

The Eco-Schools USA Seven Step framework is designed to be a flexible process and one that any school should be able to implement. You are encouraged within this framework to implement each of the Seven Steps in the way that suits your school and situation best. The steps involve a wide diversity of individuals from the school community - with students playing a primary role in the process. To help you get started, we've put together some essential framing questions on the next page for each of the Seven Steps.



TOOLS AND RESOURCES

Eco-Schools USA Seven Steps

### Essential Framing

# Questions Eco-Schools USA Seven Steps



**Step 1**


Does your team have a shared vision? How will your team communicate with each other?



eco-action team

**Step 2**


Will the students make their own audit or will you adapt the Eco-Schools USA audit? Who will take the audit? How and when will you disseminate the results?



environmental audit

**Step 3**


What are the root causes of the audit results? What strategies would effect change that is aligned with your vision? How will you know?



eco-action plan

**Step 4**


How often and when will you evaluate and monitor the effectiveness of your action plan? Where will the data be collected and displayed?



monitor and evaluate

**Step 5**


How will the students have the opportunity to discover information about the pathway topics?



link to curriculum

**Step 6**


How will you spread project results out to the larger community? What media outlets will you access/invoke? What steps do you have to take for an event to happen and by when?



involve the community

**Step 7**

What thought do your students want to share with the larger school-community about what they value, believe and how they are acting in alignment with those values?



create your eco-code



## Step 1: Form an Eco-Action Team

The heartbeat of Eco-Schools action and learning

*Leadership | Listening | Respect | Facilitation | Empathy | Cooperation | Negotiation*

### What is it?

The Eco-Action Team is the driving force behind Eco-Schools USA. Ideally, your Eco-Action Team should represent the whole school community - including people beyond your school walls, such as facilities staff, board members and community members. Keep in mind students should play a leading role on the team and represent the views of the entire student body.

### How Does it Work?

The Eco-Action Team should meet formally a minimum of four times a year and informally as needed when conducting investigations and completing projects. Try to make sure at least one student from each grade level is on the committee. An Eco-Action team is supported and facilitated by an adult Eco-Coordinator, but led by students. Eco-Coordinator roles can be shared and it is actually a good idea to get several teaching staff involved if possible.

### Award Criteria



The Eco-Action Team consists of students and adults | The team meets at least 4 times a year | Minutes are kept at each meeting | Decisions and actions are shared with the school community



The Eco-Action Team consists of students, staff and community members | The team meets at least 6 times a year | Students are integral in the decision making process and share responsibility for keeping minutes | Students are responsible for communicating team information to the school community



The Eco-Action Team consists of 50% students, and also includes, teachers, staff, and community members | The team meets at least 8 times a year | Students take significant responsibility for conducting the Eco-Action Team meetings and the team's decision-making process | Students share responsibility for keeping minutes for each meeting and communicating information to the whole school | Student representatives actively engage other students and collect suggestions from the greater student body

## How can you help?

Use the Eco-Action Team planning worksheet to help you organize your group. You can attend meetings to help students develop their teamwork and collaboration skills. Provide inspiration. But remember, Eco-Schools is a student-led process, please try not to impose your project ideas and activities onto them, help them to find the project they want to do.



## Step 2: Conduct an Environmental Audit

Investigating the schools environmental and sustainability performance

*Inquiry | Independent Learning | Number Sense | Creativity | Reflection | Scientific Investigation*

### What is it?

The Environmental Audit is an essential tool for understanding the current environmental situation in your school. It will provide the basis for your Eco-Action Plan.

### How Does it Work?

Completing the Environmental Review Checklist is a recommended first step before completing one of the more in-depth pathway audits. The results from this checklist can help your Eco-Action Team focus on a specific pathway. The Environmental Review is optional, but highly recommended if you are just beginning your sustainability journey. The Environmental Audits should be led by students. All pathway audits are available for free on our website. Carry out surveys, monitor behaviors, use questionnaires, create graphs, take photographs and video and present the results to the school via announcements, information boards, social media and/or electronic communications.

### Award Criteria



A formal or informal audit is conducted | Schools can develop their own criteria or use an Eco-Schools USA audit checklist.



Two formal audits are conducted using an Eco-Schools USA audit | Audit findings are documented | Students play an active role in conducting the audit | Results are shared with the whole school



A minimum of three formal and comprehensive audits are conducted using an Eco-Schools USA audit | Audit findings are documented | Students are actively involved in conducting the audit and engage resource specialists from the community | Results are shared with the whole school along with the wider community | Environmental audits are conducted yearly to evaluate overall progress

## How can you help?

If you or another adult have detailed knowledge of one of the Eco-Schools USA pathways, you could offer to help the Eco-Action Team to do an in depth review in your area of expertise. Remember, it is the Eco-Action Team who will complete the Environmental Audit, but your expertise could offer additional insight and evidence.



## Step 3: Create an Eco-Action Plan

Come up with ideas for what to do based on the results of the audit(s)

*Critical Thinking | Planning | Creativity | Time Management | Teamwork | Reflection | Goal Setting*

### What is it?

The Eco-Action Plan follows from the results of your **Environmental Audit** and sets forth a series of goals and a structured timetable for achieving environmental improvements.

### How Does it Work?

The **Environmental Audit** will have sparked a lot of ideas for potential projects. The **Eco-Action Team** now needs to draw up a workable plan with details of the projects they want to take action on. It will include lists of tasks, supplies/equipment needed, people to involve for each project and who is responsible for each action. The **Eco-Action Team** will also outline a time table and a budget if there are costs associated with implementation. Copies of the **Eco-Action plan** should be made available for the whole school to see; the more people are aware of what the **Eco-Action Team** is trying to do, the more likely they are to get involved and take action. Click here for an example of a [sample Biodiversity Eco-Action Plan](#). You'll find samples and a blank **Eco-Action Plan** worksheet on the **Resource page** for each pathway.

### Award Criteria



Create a basic action plan based on the results of the **Environmental Audit** focused on one **Eco-Schools USA Pathway** | Share the **Action Plan** with the whole school community | Schoolwide action is taken to mitigate environmental problems, focusing on the selected pathway



Create a detailed action plan that addresses at least two **Eco-Schools USA Pathways** | Include specific quantifiable targets along with a timeframe for completion | Plan a range of actions covering more than one aspect of environmental management | Results are shared with whole school along with the wider community



Create a detailed action plan based on the results of a formal comprehensive **Environmental Audit** | Include specific quantifiable targets along with a timeframe for completion | Plan a range of actions which addresses at least three **Eco-Schools USA Pathways** | Action plan prioritizes targets | Action plan provides cost-benefit information for each action

## How can you help?

Give advice on how to break down a big goal into smaller, more manageable goals. Share examples of **Action Plans** that you have worked on in the past. Help students think systematically about the broader impacts their projects might have at a local, national, and global level.



## Step 4: Monitor and Evaluate Progress

Measuring change, analyzing what's working and making changes where needed

*Number Sense | Design | Inquiry | Reflection | Teamwork | Photography & Video | Accuracy | Revision*

### What is it?

The process of actively engaging in the monitoring and evaluation of the Eco-Action Plan are important tools to help you check your progress, adjust your plan for greater success and provide validation for your project or initiative.

### How Does it Work?

In making any project successful it is important to monitor whether things are changing or have changed. Ideally you want to identify how you will monitor and evaluate your progress as a part of the Eco-Action Plan. There are lots of different ways to monitor and evaluate change:

*Before and after photos | analysis of electricity and water bills | biodiversity surveys | knowledge and attitude questionnaires | transportation surveys | post-audits | meter readings | litter counts*

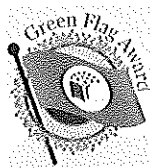
### Award Criteria



The Eco-Action Team identifies and monitors progress of Eco-Action plan | Successes and challenges are noted in the formal record and archived for use when applying for the Green Flag award



The Eco-Action Team identifies and monitors progress of the Eco-Action plan against initial timeframe and targets | School shows significant progress on one large scale project focused on two Eco-Schools USA pathways | Progress and challenges are communicated to whole school



The Eco-Action Team identifies and monitors progress of Eco-Action plan against initial timeframe and targets | Students are engaged in monitoring and evaluation | Data is used in some curriculum work | School shows significant progress on several large scale projects addressing at least three Eco-Schools USA pathways | Progress and challenges are communicated to whole school and wider community

### How can you help?

Help students design questionnaires, surveys and data analysis techniques. Offer help on how to use a camera to collect accurate before and after images. Explain how post audits can be used and how to analyze utility bills effectively. Help students focus on what it is that's most important to measure.





## Step 5: Link to Existing Curriculum

Educating for sustainability in the classroom and as citizens of the community

*STEM | Literacy | Inquiry | Systems Thinking | Reflection | Critical Thinking | Design | Collaboration*

### What is it?

It is important that your Eco-Schools USA program become an integrated part of your overall curriculum and not another “add on” to an already busy academic schedule. The principle behind Eco-Schools USA is that the topics you are teaching in the classroom should have an influence on how your school environment operates. Use the school building and grounds as a learning laboratory capable of transporting students through a sustainability journey that is rigorous, experiential and fun.

### How Does it Work?

Student-led projects to improve the school’s sustainability performance are a great example of action learning, but learning for sustainability can happen in a variety of ways at a school. Eco-Schools are able to demonstrate how the learning going on in class is helping students develop sustainability knowledge and skills. Teachers review the school’s current curriculum and see where sustainability topics are being taught and suggest ways to further integrate environment-based instruction. Teachers should also be able to identify where skills like critical thinking, collaboration, creativity and communication are being developed; these all contribute to education for sustainability. Encourage colleagues to take advantage of their Eco-Schools work too; real-life projects can bring just about any subject to life.

### Award Criteria



Students have the opportunity at most grade levels and across disciplines to integrate environmental issues into the classroom, on school site or in local community



Students have the opportunity at most grade levels and across disciplines to integrate environmental issues into the classroom, on school site or in local community | Students’ experiences are integrated into curriculum and are inquiry based



Students at all grade levels have the opportunity to integrate environmental issues into the classroom, on school site or in local community | Students’ experiences are integrated into curriculum and are inquiry based | School staff are provided with professional development and training on best practices, knowledge and skills for environmental education

### HOW CAN YOU HELP?

Help colleagues see how they are already contributing to education for sustainability and simple ways they can incorporate environment-based topics as a part of their pedagogy rather than separate from it. Remember to stress a student’s Pre-K-12 experience is about educating the whole child, mind, body, and spirit and sustainability is one way to develop youth’s skills, values, and knowledge.



## Step 6: Involve the Community

Let the whole school and wider community know what the Eco-Action Team is doing and how they can help make a difference

*Information, Media & Technology Skills | Public Speaking | Design | Leadership | Teamwork | Facilitation | Information, Communications and Technology Literacy*

### What is it?

Involving the community is about two things – one, the diversity of members who take part in the Eco-Action Team and two, the diversity of school, family and community members the Eco-Action Team works to engage as a part of their sustainability work. Work together to find out the interests and needs of your community and then work together to make where you live, work and play a happier, healthier place to be.

### How Does it Work?

To spread the impact of the Eco-Schools USA work, the Eco-Action Team will need to get as many people involved as possible. They might also want to get involved with sustainability projects that are happening nearby. The Eco-Action Team can let people know about their Eco-Schools USA work by having a prominent and eye-catching display, giving assemblies and class presentations, school announcements, social media and by organizing some fun events. They could exercise their fellow students' artistic side by designing posters too. By involving the wider community in diverse sustainability initiatives the Eco-Action Team will be engaging even more people in the learning and practices of sustainability.



## Step 6: Involve the Community (continued)

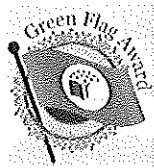
### Award Criteria



The school uses a prominent, designated way such as a newsletter, bulletin board or website, to communicate Eco-Schools USA activities with staff and students along with the greater community



The school uses a prominent, designated ways such as, a newsletter, bulletin board and website, to communicate Eco-Schools USA activities with staff and students along with the greater community | The whole school, along with community volunteers, engage in a number of Eco-Schools USA activities



The school uses a prominent, designated way such as a newsletter, bulletin board or website, to communicate Eco-Schools USA activities with staff and students along with the greater community | The whole school, along with community volunteers, engage in a number of Eco-Schools USA activities | The school develops a day of action or other event that engages the greater community in learning about and helping with Eco-Schools projects | Students write about Eco-Schools USA projects for local papers and magazines | The school uses the Eco-Schools USA website and other communication tools to share its projects with other schools in US and with the global community

### How can you help?

Help students to develop their public speaking skills as well as their professional media and communication skills. Practice negotiation scenarios, through role play, acting as the "critical friend." Give advice on writing press releases and contacting the media. Show your support by promoting events and activities through your own channels, online, in print and in person.



## Step 7: Create Your Eco-Code

Creating a call to action that the whole school can get behind

*Communication | Design | Information, Communications & Technology Literacy | Empathy | Teamwork | Creativity | Persuasion | Critical Thinking*

### What is it?

The Eco-Code is the Eco-Action Team's mission statement. It should demonstrate – in a positive, clear and imaginative way - the whole school's commitment to improving their environmental performance. The Eco-Code should be reflective of your Eco-Action Plan, curriculum and student experiences.

### How Does it Work?

The Eco-Code is a great way to get people thinking about the work members of the Eco-Action Team are trying to do and why they are trying to do it. The Eco-Action Team could create a song, statement, poem, rap, acronym, acrostic, limerick, or something even more creative! The creation of the Eco-Code is student-driven and should be reviewed and updated every two years. The Eco-Code should be prominently displayed in a variety of locations around the school.



## Step 7: Create Your Eco-Code (continued)

### Award Criteria



The Eco-Action Team gathers input on a school-wide basis and develops an Eco-Code which is then agreed upon and adopted



The Eco-Action Team gathers input on a school-wide basis and develops an Eco-Code which is then agreed upon, adopted and displayed



The whole school and greater community is given the opportunity to make suggestions on developing (or refining and enhancing) the Eco-Code | The Eco-Action Team takes suggestions, refines the Eco-Code and takes to full school for adoption | The Eco-Code is prominently displayed for all to see as they enter the school | The Eco-Code is reviewed every year to ensure relevancy

### How can you help?

When an Eco-Action Team is trying to come up with an Eco-Code it is a good chance for them to think about the wider environmental and sustainability issues impacting their city, state, nation and globe. Help students to develop their critical and systems thinking skills. If you are artistic, this is a great opportunity to help students develop their poetic, lyrical and artistic skills. This is also a great opportunity to get the school community involved, through Eco-Code development contests.

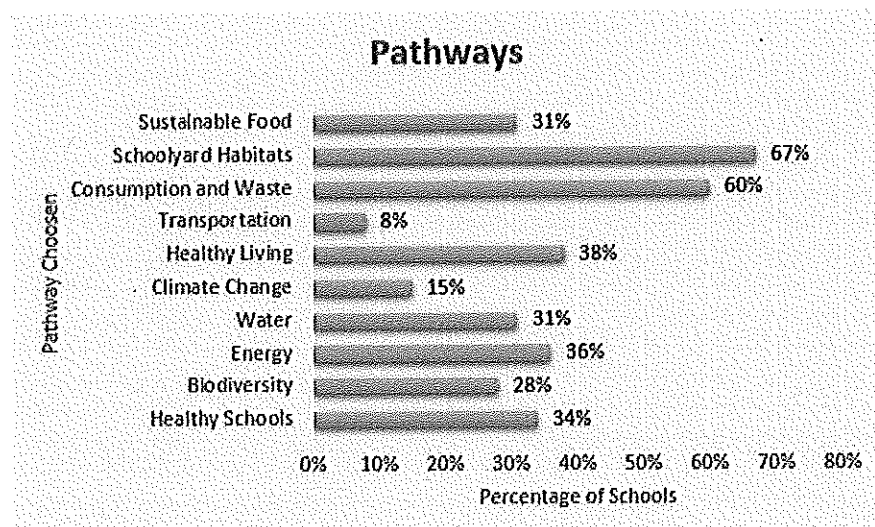
## The Pathways to Sustainability

Use the results of your Environmental Audit to set realistic targets and concentrate on areas that are most relevant to your school. Most schools tackle one or two pathway audits at a time, but it will be a decision made by those who best understand the school, the **Eco-Action Team**.

If the Eco-Action Team isn't quite sure which pathway to take on first or next, checkout our Environmental Review Checklist. This checklist includes questions for each of the pathways and will provide teams needing added support with some initial data. This initial data can inform a team's decision when choosing a pathway to address.

Many of the pathways overlap or are closely related to each other. *Energy*, for example, is connected to *Climate Change*, and *Healthy Living* is connected to *Sustainable Food*. You may find that by making progress in one area, you are taking steps toward improving your performance in another.

Based on our 2016 survey of our registered Eco-Schools, you can see that each school chooses the environmental focus that is best for their students, faculty and situation.



Read on to find out more about the importance of each pathway and to understand why your school should address each pathway.

**Please note: the Energy Pathway must be addressed by every school applying for a Green Flag award.** This pathway has the greatest return on investment in terms of savings to the school as well as the biggest impact on the carbon footprint of the school.



TOOLS AND RESOURCES

Pathways to Sustainability



## Pathways Key Questions



**Biodiversity:** If you go outside for a walk around your school grounds, you are sure to observe both living and nonliving things- natural and human-influenced. What is the relationship between the living and nonliving things you find? Based on your discoveries, what can you do to create favorable conditions for a diversity of life?



**Climate Change:** How do our behaviors and attitudes in our school and homes contribute to carbon dioxide emissions? What is the effect of those behaviors and attitudes on the health of our ecosystem?



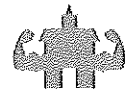
**Consumption and Waste:** How does nature cycle materials? What is the effect of our material-cycling process on the health of our ecosystem? Is there something we can change to better mimic the way nature cycles materials?



**Energy:** Where does energy come from? How does energy flow through nature? How do our behavior and attitudes around energy usage impact our economic and environmental health?



**Healthy Living:** What are healthy actions? How does physical activity impact learning?



**Healthy Schools:** What happens when hazardous waste is not disposed of properly? How is air quality inside different from the air quality outside my school?



**Learning About Forests (LEAF):** How have forests changed over the last 300 years? Why do we need forests? Why are forest ecosystems important to wildlife? What kind of forest is growing in your schoolyard or community? What are current threats to our forests?



**Schoolyard Habitats:** What aspects of our school grounds supports life for a diversity of species? What kinds of natural phenomenon does your school grounds provide for students to investigate?



**Sustainable Foods:** From where does our food come? What is the relationship between how food is grown, ecological health, and our physical health?



**Transportation:** What trends and patterns characterize the way we transport ourselves to school and home? Is there a way to change those patterns to reduce the impact of transportation on the health of our ecosystem and improve the health of our school-community?



**Water:** How much water is used for everyday living at home and school? What can we do to both improve and conserve water quality and quantify?



**Watersheds:** What purpose does a watershed serve? What factors influence the health of our watershed? Are wildlife impacted by watershed health?



**Oceans:** What role do coasts and oceans play in a state's and/or community's economy? How does litter, specifically plastics, impact wildlife? How is climate change impacting our oceans?



**Wetlands:** How do wetlands act as filters? What is the impact of development on wetlands? What plant and animal species rely on healthy wetlands for survival?







## Biodiversity

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*Wildlife | Insects | Forests | Habitats | Ecology | Ecosystems | Birds | Survival | Pollinators | Plants | Fish | Relationships | Structure and Function | Careers*

**Biodiversity** is the variety of life on our planet. It can be studied on many levels. At the highest level, one can look at all the species on the entire planet. On a much smaller scale, one can study biodiversity within a single ecosystem (for example, a pond) or a neighborhood park. Identifying and understanding the relationships between all living things on Earth is one of the greatest challenges in science. Researchers have estimated that there are between 3 and 30 million species on Earth, with a few studies predicting that there may be over 100 million species. Currently, we have identified only 1.7 million species, so the vast majority of species on the planet are not yet known!

- Biodiversity provides us with a wide array of foods, fibers and other materials, which support our economy
- A diversity of pollinators, plants and soils provide a variety of foods for our diet.
- Most medical discoveries to cure diseases and lengthen life spans were made because of research into plant and animal biology and genetics.

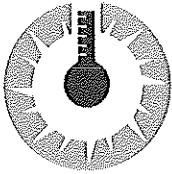
### Driving Questions

- ✓ How can we, as conservation botanists, increase the numbers of native plant species on our school grounds?
- ✓ How can we, as members of the community, work with our local government to bring awareness to the biodiversity needs of our community?
- ✓ How can we, as wildlife biologists, engage the community in the habitat needs of our local wildlife?
- ✓ How can we, as landscape architects, design a habitat on our school grounds that will provide a place for pollinators to flourish and serve as a demonstration pollinator habitat for the community?



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Biodiversity Audit](#) | [Resources](#)



## Climate Change

*Wildlife | Insects | Forests | Habitats | Ecology | Ecosystems | Birds | Survival | Pollinators | Plants | Fish | Species*

*Climate change* is any significant change in climate lasting for an extended period of time. Climate change includes major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer.

Our natural world is a complex system. Climate has changed throughout history and is one of the things that make our planet so unique and beautiful. Man-made climate change threatens the delicate balance that keeps the Earth systems intact.

Global average temperatures are rising and the warming trend is the result of human activities. Burning fossil fuels for transportation, manufacturing, heating and cooling and electricity generation, releases greenhouse gases into the atmosphere.

Levels of these heat-trapping gases, particularly carbon dioxide (CO<sub>2</sub>), are increasing at a faster rate than at any other time on record. The consequences of this unprecedented change in the atmosphere are both uncertain and likely to be extreme as is evident by the increase in extreme weather events, such as winter storms, wildfires, droughts and floods.

Whole school communities can play a key role in reducing greenhouse gas emissions by actions that can shrink their “carbon footprints.”

### Driving Questions

- ✓ How can we, as engineers, design, develop, and test a carbon saving instrument, machine, space, plan, etc. that has the potential to reduce carbon output in an industry?
- ✓ How can we, as landscape architects, design and construct an outdoor green space with a net zero carbon impact (reduce greenhouse gas emissions), which will provide opportunities for students to learn and study?
- ✓ How can we, as atmospheric scientists, better understand how our city’s climate is changing and raise awareness of local issues and offer actions community members can take toward mitigation?
- ✓ How can we, as environmental protection technicians, monitor our air, water, and soil for pollutants and work with our local city government to increase awareness and effectively work together to make the community a healthier place to live?

### TOOLS AND RESOURCES



[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Climate Change Audit](#) | [Resources](#)



## Consumption and Waste

*Packaging | Bins and Dumpsters | Keep America Beautiful | Community | Behavior | Reduce | Reuse | Recycle | Reimagine*

The United States is home to just 5 percent of the world's population; however it generates 30 percent of its trash. The average American creates a staggering 4.5 pounds of garbage daily. Almost everything we do creates waste, and as a society we are currently producing more waste than ever before.

Both *consumption and waste* have major environmental impacts. Producing goods and transporting them to consumers uses large quantities of fossil fuels and produces pollution, particularly carbon dioxide (the major greenhouse gas leading to climate change). When these products become waste, they are transported again, usually to landfills, where they produce methane (another potent greenhouse gas) as they break down, or to incinerators, which generate more pollution as they burn.

### Driving Questions

- ✓ How can we, as waste managers, raise awareness of the life cycle of products at our school and how they impact our local economy?
- ✓ How can we, as members of the community, work with the city to create recycling and compost pick up or if our community has these programs how can we make them more efficient or accessible?
- ✓ How can we, as materials scientists, design products that address waste reduction and consumption habits for school and home?
- ✓ How can we, as mechanical engineers, design a machine that recycles community materials that can be sold to companies that use post-consumer products to create new products?



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Consumption & Waste Audit](#) | [Resources](#)



## Energy

*Off-Grid | Energy Efficiency | Heating and Cooling | Natural Resources |  
Change | Renewable & Nonrenewable Energy | Consumption | Production*

*Climate*

\* The Energy Pathway must be addressed by every school applying for a Green Flag award.

The nation's school districts spend more than \$7.5 billion a year on energy. Schools are the largest energy consumer in many municipalities. But up to 30 percent of that energy is used inefficiently or unnecessarily.<sup>4</sup>

By implementing energy-conservation measures and using energy-efficient technologies, schools can significantly cut their energy use. The result is financial savings as well as a reduced environmental impact.

Through simple changes in people's behavior, schools have found that a 10% reduction in energy usage can be achieved quickly and easily. In fact, a school that engages in good energy practices can end up using over one-third less energy than the average school. Efforts usually focus on heating and lighting systems, but excessive use of technology can be addressed too.

This is vitally important because using 1 kWh of electricity in the U.S. results in between 1.22 and 2.17 pounds of carbon dioxide being emitted (pounds of carbon is dependent on school's fuel source).<sup>5</sup> To visualize a pound of carbon imagine a large exercise ball. Each full exercise ball is equivalent to a pound of carbon.

### Driving Questions

- ✓ How can we, as geoscientists, better understand the benefits of renewable resources for use in our community and work with the city council on plans to include affordable access to those sources of energy, via residential and commercial mechanisms to collect, store, and use solar, wind, hydro, and/or geothermal energy?
- ✓ How can we, as members of the community, conserve energy and educate others about energy conservation and its environmental and economic benefits?
- ✓ How can we, as landscape architects, use land cover, rooftop gardens and living walls to reduce heating and cooling needs at our school and provide other schools in our district with the results of our research?
- ✓ How can we, as power (electrical) engineers, design heating and cooling systems for the vulnerable members of our community that are safe and rely only on renewable energy?

<sup>4</sup> <http://www.nrel.gov/docs/fy02osti/31607.pdf>

<sup>5</sup> <http://www.eia.gov/tools/faqs/faq.cfm?id=74&t=11>



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Energy Audit](#) | [Resources](#)



## Healthy Living

*Structured and Unstructured Play | Nutrition | Whole Foods | Community |  
Outdoor Activities | Sleep | Unplugging*

What are characteristics of *healthy living*? Some people have said, friendship, physical activity, mental exercises, helping others, stewardship, and healthy nutrition. But did you know that after the family, formal education is one of the most important factors in encouraging healthy attitudes and habits in children and young people. It is estimated that the average student will spend some 15,000 hours of his or her life at school. Schools, therefore, play a vital role in promoting not only regular exercise and healthy diets but in developing students' emotional well-being.<sup>6</sup>

The state of our health is directly related not only to long-term physical well-being but also to emotional and social factors: our general happiness, confidence and outlook on life. There is also a clear relationship between health and educational attainment.

Studies show that time spent outdoors and active helps children grow lean and strong, enhances imaginations and attention spans, decreases aggression, and boosts classroom performance. In addition, children who spend time in nature regularly are shown to become better stewards of the environment.

### Driving Questions

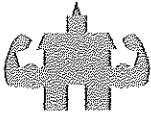
- ✓ How can we, as health educators or community health workers, educate our community about the behaviors that promote overall wellness?
- ✓ How can we, as members of the community, collaborate with our Parks and Recreation department to promote family healthy eating and activity habits?
- ✓ How can we, as epidemiologists, research the patterns and causes of diseases in our community and design a plan to lower health risks through awareness, education and activity campaigns?
- ✓ How can we, as local farmers, work with our food services department to promote healthy local, organic and fresh foods?

<sup>6</sup> <http://www.centerforpubliceducation.org/Main-Menu/Organizing-a-school/Time-in-school-How-does-the-US-compare>



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Healthy Living Audit](#) | [Resources](#)



## Healthy Schools

*IAQ | Healthy Learning Environments | Integrated Pest Management | Green Cleaning | Absenteeism | Natural Lighting | Respiratory Illnesses and Headaches*

Providing students and school staff with a healthy learning and working environment is an important component of a sustainable school. Every day, 55 million children in the United States attend school. Too often, their school buildings have poor indoor and outdoor air quality, hazardous chemicals and other unhealthy conditions that make students, staff and faculty sick and impair their ability to learn and work.

On average, one out of ten children is affected by asthma, and asthma is the leading cause of school absenteeism, accounting for close to 13 million missed days per school year. Often times, asthma and respiratory related illnesses can be exacerbated by pollutants such as chemicals, cleaning supplies, pesticides and exhaust from idling buses and automobiles.

A *Healthy School* is the responsibility of everyone, including school staff and administrators, students and community members. While student involvement is key to the Eco-Schools USA program, some issues addressed by this pathway require the expertise and training of facility managers and administrators to amend. We provide as many tools and resources as possible to assist students in working on these complex issues.

### Driving Questions

- ✓ How can we, as pest management technicians, work with the school district's director of facilities to convert to an organic pest management system?
- ✓ How can we, as members of the community, provide the school board with the evidence needed to improve health conditions at our school?
- ✓ How can we, as school nurses, work with the students, staff and faculty to decrease the numbers of days the school community is absent?
- ✓ How can we, as environmental science and protection technicians, raise awareness about toxins in and around the learning environment that contribute to ill health?



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Healthy Schools Audit](#) | [Resources](#)



## LEAF

*Trees | Wildlife | Water | Biodiversity | Habitat | Ecosystem | Urban | Timber | Wood Products | Careers | Climate Change*

**What is a Forest?** Forests are fascinating and complex ecosystems. The defining feature of a forest is dense growth of trees. Besides trees, forests are made up of soil, water, other plants, animals, birds and insects. Many of these living things are dependent on other living things within the forest for their survival. The type and extent of forest is determined by temperature, soils, adequate water, growing season and altitude. Forests produce a great deal of oxygen and absorb and store carbon. They also serve to reduce water runoff, conserving soils and protecting water quality.

In general deciduous trees (those that lose their leaves in the fall) dominate our forests in the Eastern U.S., while coniferous trees (those that keep their leaves year-round) predominate in western forests. Forests provide people with jobs and produce many different wood and non-wood products such as timber, firewood, food products and medicine. Many of our private, state and national forests are sustainably managed for multiple uses including ecological, recreational and timber production. Particularly in urban areas, forests and trees provide cooling shade, helping to reduce the impact of heat caused by buildings, concrete and human activities.

LEAF is a Foundation for Environmental Education (FEE) program. [Learn more.](#)

### Driving Questions

- ✓ How can we, as city planners, determine the value of trees in our community?
- ✓ How can we, as foresters, manage our forests for multiple uses?
- ✓ How can we, as wildlife biologists and forest ecologists, enhance forest habitat on our school grounds and in our local communities?
- ✓ How can we, as forest hydrologists, manage the forests for water quality and conservation?



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [LEAF Audit](#) | [Resources](#)



## Schoolyard Habitats®

*Wildlife and Food Gardens | Exercise | Planning | Community | Models | Creativity | Hydroponics | Vertical and Container Gardening | Green Roofs | Engineering*

As today's schools are challenged to increase both student test scores and campus safety and efficiency, redesigning the school grounds and reclaiming the landscape as an outdoor classroom and laboratory can assist schools in achieving both objectives.

*Schoolyard Habitats* are quite literally nature's playground for ideas. Students have fantastic imaginations! The school grounds are the perfect environment in which to let those minds run wild and free.

What sort of space could be created? Might there be Monarch recovery gardens? Farm to School beds for each grade level? Can we install a wind turbine? The learning opportunities are endless; think about the knowledge to be gained studying properties of matter, change over time, living and non-living systems, structure and function. Practical skills can be nurtured: measuring, building, communicating and problem solving.

Schoolyard Habitats at their best are great spaces to learn; they are litter-free, support biodiversity and will hopefully have a flagpole flying the Eco-Schools Green Flag! As a bonus, a school that addresses this pathway can easily certify their school for free as an NWF Schoolyard Habitat, and can display a Schoolyard Habitat badge on their dashboard.

### Driving Questions

- ✓ How can we, as entomologists, inform the community about the benefits of our local pollinators and open people's hearts to declining bee populations?
- ✓ How can we, as master gardeners, raise awareness about the human health benefits of gardening?
- ✓ How can we, as soil scientists, provide the community with the knowledge, tools and resources to improve the quality of soil where they live?
- ✓ How can we, as landscape architects, design an outdoor learning laboratory that is open to the public, can be used for learning at each grade level and is accessible to students and community members with disabilities?



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Schoolyard Habitats Audit](#) | [Resources](#)





## Sustainable Food

*Farm to School | Food Miles | Compost | Healthy School Lunches | Water | Soil | Nutrition  
| Diet Induced Illnesses | Local & Organic | Farmer's Market | GMOs | Food Deserts*

More than 30 million children in the United States eat a school lunch five days a week, 180 days a year. Regrettably many of these school lunches are filled with poor quality, highly processed foods that contribute to childhood obesity, diabetes, reduced attention spans and poor grades.

Most students have little to no idea where their food comes from, how it is grown and harvested, how it is processed and the impacts of its production, processing and transport to the environment.

Schools across the country are exploring and implementing innovative programs focused on food. Sustainable food programs work to bring fresh, local food to school. They provide healthy meals in school cafeterias, improve student nutrition, offer curricular connections on topics related to healthy nutrition and food and connect schools to their local communities and farms.

There are tremendous opportunities for schools to feed their students and staff better, reduce their environmental footprints, support their local economies and at the same time enhance the curriculum with engaging food-related content.

### Driving Questions

- ✓ How can we, as cafeteria staff, bring healthier food options that taste good, to students?
- ✓ How can we, as local chefs, work with students, staff and parents to create quick, healthy meals that can be enjoyed at home and school?
- ✓ How can we, as county food policy council members, ensure that our students have equitable access to healthy, affordable food, including fresh fruits and vegetables?
- ✓ How can we, as farmers, work with our local school and community to raise awareness around food systems and increase participation or start a farmer's market?



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Sustainable Food Audit](#) | [Resources](#)



## Transportation

*Air Pollution | Public Transportation | Cycling | Walking | Traffic Calming | Idling  
| Emissions | Climate Change | Safe Routes to School*

**Transportation.** Traffic. Travel. All unavoidable in any young person's life as they go to and from school. Options on how to travel vary according to where we live and where we need to go.

While there are noisy, polluting, uncomfortable, expensive and slow ways to move, there are also fast, clean, comfortable, cheap, and healthy routes from point A to B. All modes have an impact on an individual's health, on a community and on the environment. The goal is to make those impacts positive or, at the very least, less negative.

According to Safe Routes to School, half of students attending school in the U.S. are dropped off in the family car, while 25 million students ride a bus to school. Approximately 9.9 million students (25 percent) live within one mile of school, and only half of these students walk or bike to school. Another 6.3 million children (16 percent) live between one and two miles from school, and just 12 percent of those students walk or bike to school.

Schools can do a lot to improve the way their staff and students travel. There may be new modes of transportation to test and promote or new routes to explore that take children through greener places. There may be big questions to pose about why we travel and whether it is better to go by train, car, bike, plane, bus or on our own two feet.

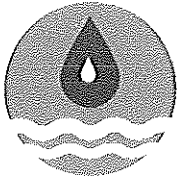
### Driving Questions

- ✓ How can we, as urban/city planners, work with the school community to develop land use plans and programs that will promote safer routes for students to walk and bike to school?
- ✓ How can we, as members of the community, design a tool for the school and community to safely bike or walk to school?
- ✓ How can we, as civil engineers, provide growing cities or aging cities with designs that create safe routes for students and community members to access local schools?
- ✓ How can we, as health professionals (i.e, doctors, technicians, nurses, etc.), increase knowledge about the importance of heart health through activities such as walking and biking?



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Transportation Audit](#) | [Resources](#)



## Water

*Conservation | Pollution | Watershed Education | Freshwater & Marine Wildlife | Hydration | Waste | Collection | Grey Water Recycling | Rain Barrels*

Water covers about 70 percent of the Earth's surface. But the vast majority of Earth's water is found in the oceans, too salty to drink and unfit for many other applications. Of the freshwater on Earth, about two-thirds is frozen in the ice caps and glaciers, which leaves less than one percent accessible for human use.

Fresh clean water is one of the basic necessities of life. But in the United States and throughout the world, it is becoming a scarce resource. As weather patterns shift and temperatures rise due to climate change, water security, including health and conservation will only become more crucial.

Most people take water for granted, that it has always been in abundance and available, much in the same way that electricity or heating are perceived.

By studying water, where it comes from, how it cycles through the environment and why we are so dependent on it, students will develop their systems thinking skills. Most importantly they will also come to understand how water connects us intimately with millions of species and with the landscapes and wildlife we love.

### Driving Questions

- ✓ How can we, as a school district facilities manager, reduce water consumption and waste within the schools?
- ✓ How can we, as water conservation innovators, design a system to reduce water use of one of any number of daily water using tasks?
- ✓ How can we, as student conservationists, convince the school board to install water saving bottle filling water stations?
- ✓ How can we, as hydrologists, raise awareness around water conservation and its impacts for the local economy?



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Water Audit](#) | [Resources](#)

## WOW - Watersheds, Oceans & Wetlands

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No matter where we live, the actions we take impact critical ecosystems as water travels throughout our watersheds, filtering through our diminishing wetlands and into our majestic struggling oceans. Through behavior change, creative design and innovative technology the future stewards of this planet can improve the health of these critical systems.

Schools can choose to implement any of the three pathways under WOW: Watersheds, Oceans or Wetlands. Separate requirements for each pathway along with tools and resources can be found on the next few pages.





## WOW - Watersheds

*Watershed Education | Aquatic Animal & Plant Species | Riparian Buffers | Natural Filtration | Water Cycle | Soil Quality | Water Quality | Land Cover | Runoff | Pollution | Upstream | Downstream*

How often do you think about water? We drink it, bathe in it, play in it and cook with it. Like many in the United States, we don't give a lot of thought when it comes to water. For most of us it is readily accessible. People and wildlife depend on water to live. Every effort must be made to conserve, restore and protect our waterways.

A watershed is an area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel. The word watershed is sometimes used interchangeably with drainage basin or catchment. Ridges and hills that separate two watersheds are called the drainage divide. The watershed consists of surface water--lakes, streams, reservoirs, and wetlands--and all the underlying ground water. Larger watersheds contain many smaller watersheds. It all depends on the outflow point; all of the land that drains water to the outflow point is the watershed for that outflow location. Watersheds are important because the streamflow and the water quality of a river are affected by things, human-induced or not, happening in the land area "above" the river-outflow point. (USGS)

### Driving Questions

- ✓ How can we, as hydrologists, better educate our community on how water moves through our watershed and promote the importance of a healthy watershed?
- ✓ How can we, as water utility managers, educate the community about storm water curb and gutter inlets in an effort to reduce harmful pollutants from entering our local waterways?
- ✓ How can we, as conservation biologists, understand the needs of the plant and animal life in our local watershed and engage the community in action-oriented activities that will make a positive impact on our watershed ecosystems?
- ✓ How can we, as members of the community, impact what happens downstream in our watershed, in an effort to decrease the negative impacts to water quality, quantity and wildlife habitat?



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Watersheds Audit](#) | [Resources](#)



## WOW - Oceans

*Climate Change | Pollution | Carbon Sink | Gyres | Acidification | Plastics |  
Wildlife | Bycatch | Overfishing | Invasive Species | Careers*

Whether we live near the coast or hundreds of miles away, our world's oceans provide goods and services we all rely on. (NOAA)

- The ocean produces over half of the world's oxygen and stores 50 times more carbon dioxide than our atmosphere.
- Many medicinal products come from the ocean including ingredients to help fight cancer, arthritis, Alzheimer's disease and heart disease.
- The ocean helps to regulate our climate and weather patterns by constantly transporting heat from the equator to the poles.
- 76 percent of all U.S trade involves some form of marine transportation.

Beyond the goods and services our oceans provide they are also home to well over a million species. These include aquatic habitats as diverse as those found on land, from coastal tide pools to coral reefs and kelp forests to deep ocean trenches. There are over 100 marine species listed as endangered or threatened under the Endangered Species Act, each playing a critical role in their niche and larger food web.

There are several challenges that face our oceans, below are the top five that are of biggest concern.

1. Overfishing
2. Coastal pollution
3. Habitat destruction
4. Acidification
5. Warming

What can schools do? Education is key to understanding the science, economics and culture related to these issues. Through education, awareness and experience our hope is that students will be empowered and moved to action that will have lasting positive outcomes.

### Driving Questions

- ✓ How can we, as students concerned about marine wildlife, make an impact even if we live far away from the coast?
- ✓ How can we, as marine biologists, raise awareness about the needs of endangered and threatened marine species?
- ✓ How can we, as commercial fishermen and women, reduce the impact we have on marine ecosystems?
- ✓ How can we, as marine scientists, engage the community on coastal resilience projects?



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Oceans Audit](#) | [Resources](#)



## WOW - Wetlands

*Soil Quality | Soil Moisture | Migration | Wildlife Nurseries | Tidal | Non-Tidal |  
Water Quality | Aquatic & Terrestrial Biodiversity | Filtration | Carbon Sinks |  
Green Infrastructure*

What is a Wetland? Wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season. Water saturation (hydrology) largely determines how the soil develops and the types of plant and animal communities living in and on the soil. Wetlands may support both aquatic and terrestrial species. ([EPA – Wetlands](#))

Wetlands are amazing ecosystems. Economists estimate that one acre of wetlands provides about \$10,000 worth of ecosystem services<sup>7</sup> which include: filtering and recharging drinking water, preventing flooding, protecting our coasts from hurricanes and storms and providing habitat for diverse wildlife populations.

Today less than half of our original wetlands remain. Wetlands need our help and need it now. These ecosystems are vanishing at such a quick rate in some parts of the country that within our lifetime they may just be a memory. Multiple waterfowl and other bird species, along with mammal, reptile, amphibian, fish and insect species depend on wetlands for their survival. Forty-five percent of species found in wetlands are rare and endangered. ([University of Florida](#))

### Driving Questions

- ✓ How can we, as bird watchers, determine if the wetland is a healthy wetland for birds to use during migration?
- ✓ How can we, as wetland volunteers, raise awareness about the impacts of downstream runoff on our wetlands?
- ✓ How can we, as wetland biologists, determine the health of our wetland's vertebrate or invertebrate species?
- ✓ How can we, as home builders, plan for a new community of homes that does not impact the nearby wetland?

<sup>7</sup> Ecosystem services are defined as benefits obtained from an ecosystem.



### TOOLS AND RESOURCES

[Top 10 Tips](#) | [Fast Facts](#) | [Standards Alignment](#) | [Sample Action Plan](#) | [Wetlands Audit](#) | [Resources](#)

## Eco-Schools USA Awards

**Now that you've implemented the Seven Steps, you may be ready to apply for an Eco-Schools USA award.** There are three levels to the award system. The Bronze and Silver awards are self-assessed, and can be achieved by meeting the specific criteria for each award and then submitting the on-line award form. The on-line award form can be found on your dashboard page in the right-hand navigation, "Apply for New Awards, Manage Awards and Download Certificates.

The criteria that make up each of the Seven Steps are assigned point values. As each step is completed, points are accumulated toward an award. The points required to reach each award level are outlined below. Upon successful completion of the application and all criteria met, the school will be awarded either the Bronze or Silver Award, and certificates of achievement can be downloaded and printed. The top award is the Green Flag, which must be evaluated by an Eco-Schools USA assessor and renewed every two years. A school is considered to be a permanent Eco-School once it has gained its fourth Green Flag. All the necessary awards forms and checklists can be found in our Eco-Schools Toolkit at the end of this handbook.

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Earn 100 points to apply for a Bronze Award



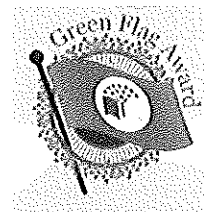

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Earn 200 points to apply for a Silver Award




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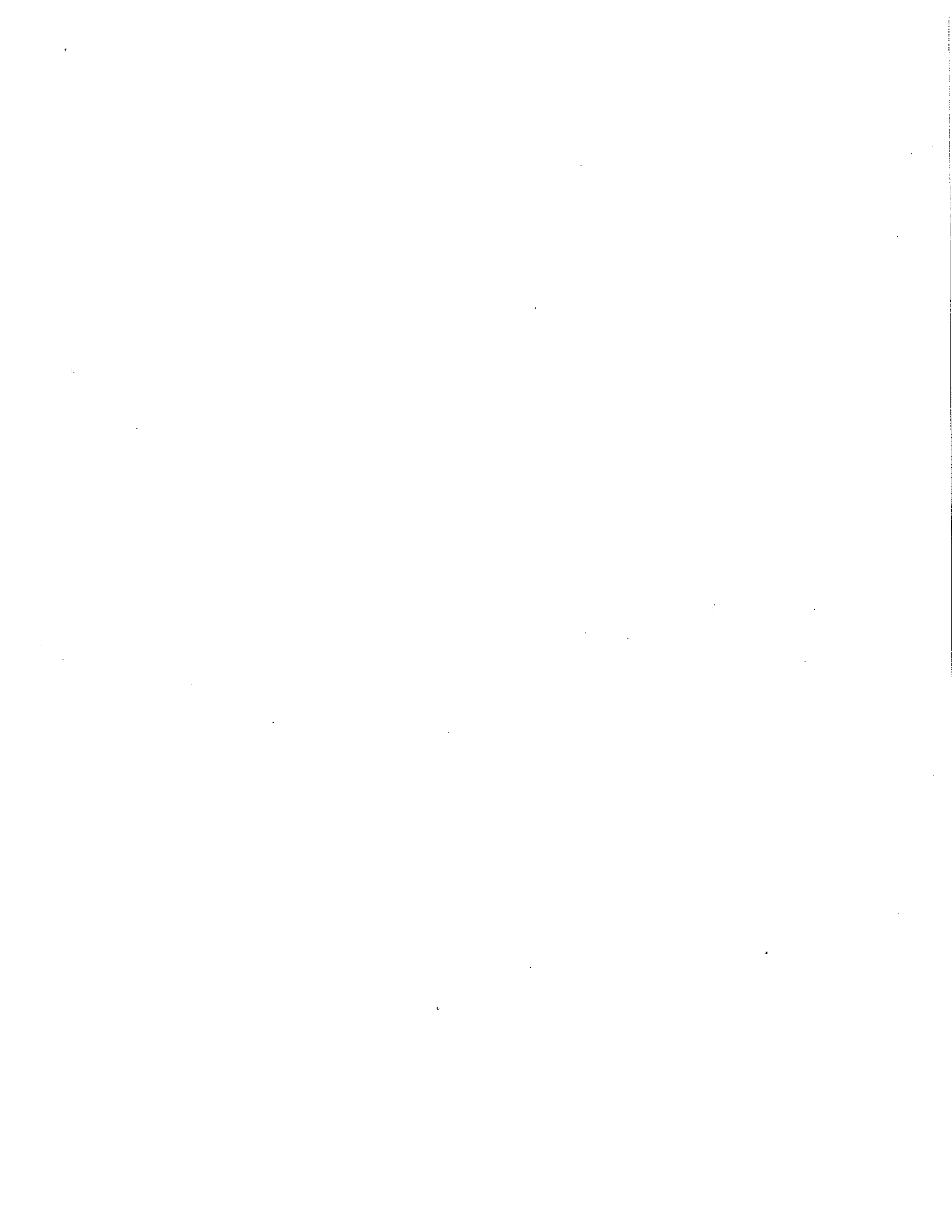
Earn 300 points to apply for a Green Flag Award  
(Must be renewed every 2 years)




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To keep track of your school's points, login using the email address you registered with to access your school's dashboard. As you check off your accomplishments on the award form, the dashboard will display your current point's total. Please note that the Pathway icon will not appear as being addressed until the award application is submitted and approved. A school can apply for any one of these awards depending on the level of criteria met under each of the Seven Steps. The Bronze Award Criteria, Silver Award Criteria and Green Flag Award Criteria, will help to give schools an idea of what stage they have reached and what level of award they could apply for.





### Step by Step Summary:

- ✓ Check the Eco-Schools interactive map to find out if your school is already registered as an Eco-School. If not, go to the registration page and sign-up! Complete the registration form and click 'submit'.
- ✓ If you previously registered as an Eco-School, simply login using the email address used to register the school to access your school's profile.
- ✓ On your schools profile page click on "Apply for New Awards, Manage Awards and Download Certificates." Choose the award form needed from the drop down menu and click 'submit'.
- ✓ Fill-out the award application and click 'submit.' If the application is only partially completed you can click 'save' and return to the form at a later time.
- ✓ If the application is successfully entered and all criteria met, your school will be automatically awarded the Eco-Schools USA Bronze or Silver Award. You will be able to download and print a personalized certificate of achievement and your addressed pathway (s) will no longer be grayed out and will display metrics.

### HOW-TO APPLY FOR A Bronze or Silver Award

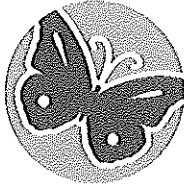
1. Update your dashboard with your goals, accomplishments, and metrics. Add a minimum of 3 photographs;
2. Upload your pathway audit and action plan (as a PDF) to your award form;
3. Upload any other documentation and/or evidence you feel will be helpful in evaluating your sustainability work.

### HOW-TO APPLY FOR A Green Flag Award

1. Update the school's profile on your dashboard;
2. Complete the online Green Flag Application. Access the application directly from your profile page by clicking on "Apply for an Award: Green Flag" in the box in the upper right-hand corner of the screen.
3. Upload the following items:
  - a. Offline Green Flag Application or Green Flag Renewal Application
  - b. Audits for at least 3 pathways, one of which must be energy
  - c. Action Plans for at least 3 pathways
  - d. Photographs of Eco-Schools bulletin board or display and/or link to your school's Eco-Schools web page;
  - e. Evidence of progress – this could be a written summary, iMovie or other video platform, or an online photobook
  - f. Copy of Eco-Code

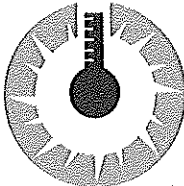
## Resources

*Non-Profits | Small Businesses | Green Schools | Corporations | Foundations | Government Agencies*



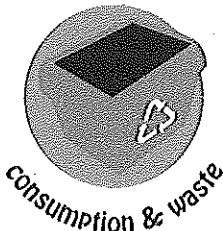
biodiversity

[All About Birds](#) | [Audubon Mammals App](#) | [Bioblitz](#) | [Bug Guide](#) | [Certified Schoolyard Habitats](#) | [eNature Field Guides](#) | [GLOBE](#) | [Growing Up WILD](#) | [Journey North](#) | [Monarch Watch](#) | [Project Budburst](#) | [Project Noah](#) | [Project Learning Tree](#) | [Project WET](#) | [Project WILD](#) | [Ranger Rick and Ranger Rick Jr.](#) | [SciStarter](#) | [The Natural Inquirer](#) | [Tree Identification](#) | [USDA Plant Database](#)



climate change

[Climate Classroom](#) | [Climate Classroom Kids](#) | [Cool School Challenge](#) | [Energy Star](#) | [EPA Climate Change Resources](#) | [NASA's Climate Kids](#) | [NASA's Vital Signs for the Planet](#) | [NWF/NAEE Guidelines for K-12 Climate Change Education](#) | [NWF's Climate Change Education Resources](#) | [Young Voice for the Planet](#) |



consumption & waste

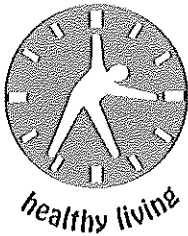
[Can Central](#) | [Carton Council](#) | [Charlotte Central School Address Consumption and Waste](#) | [Crayola ColorCycle](#) | [Earth 911](#) | [EPA's Waste Planet Protectors Club for Kids](#) | [EPA's Waste Reduction Model Calculator](#) | [Freecycle](#) | [Keep America Beautiful](#) | [Let's Go Solar Students Guide to Global Warming](#) | [Nike Reuse-A-Shoe](#) | [Recycle Across America](#) | [Reuseit: Waste Free Lunches](#) | [Textbook Recycling in America \(Research Study\)](#) | [Trash On Your Back](#)



energy

[Alliance to Save Energy](#) | [Classroom Energy](#) | [EIA Energy Kids](#) | [Energy Star](#) | [KidWind Guide to Home Energy Efficiency](#) | [National Renewable Energy Lab](#) | [NREL: Learning about Renewable Energy](#) | [SERT Program](#) | [U.S Green Building Council](#) | [Wisconsin K-12 Energy Education Program](#)

## Resources (Continued)



[Active Living Research](#) | [Alliance for a Healthier Generation: Physical Activity and Education](#) | [American Heart Association Healthier Kids Activities](#) | [Children & Nature Network](#) | [Healthy Schools Campaign – Schools Food and Fitness](#) | [Let's Move Outside](#) | [National PTA: Healthy Lifestyles](#) | [Nature Play & Learning Spaces](#) | [NFL Play 60](#) | [Playworks: Bring Back Recess](#) | [U.S. Fish & Wildlife Service's Let's Go Outside](#)



[Children's Environmental Health Network: Eco-Healthy Child Care Factsheets](#) | [Greening Schools Daylighting Resources](#) | [Green Schools Initiative: Toxics Free](#) | [Healthy Schools Campaign: Green Clean Schools](#) | [Healthy Schools Network](#) | [Rehab the Lab: Creating Safer School Labs](#) | [Safe Lab: School Chemistry Lab Safety](#) | [U.S. EPA: Clean School Bus](#) | [U.S. EPA: Healthy School Environments](#) | [U.S. EPA: Indoor Air Quality Tools for School Action](#) | [U.S. EPA: Schools & Mercury](#)



[Arbor Day Foundation](#) | [Forestry/Natural Resources Lesson Plans](#) | [Fueling Our Future](#) | [Global Forest Watch](#) | [LEAF](#) | [Natural Inquirer](#) | [Project Learning Tree](#) | [Project Seasons](#) | [The Tree Benefit Calculator](#) | [Trees are Terrific](#) | [Trees for Wildlife](#) | [USDA Forest Service: Discover the Forest](#) | [USDA Forest Service Finding My Forest](#) | [Urban Forest Lesson Guide](#) | [Years of Living Dangerously Video Series](#)



[Benefits for Students](#) | [Designing Landscapes for People and Wildlife](#) | [Educator Resources](#) | [Environment-Based Education: Improving Attitudes and Academics for Adolescents](#) | [Making your Schoolyard Accessible](#) | [Vermont FEED: Farm to School Food Education](#) | [Why Create a Site?](#)

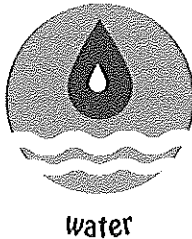
## Resources (Continued)



[Burlington School Food Project](#) | [CDC: A look inside food deserts](#) | [Center for Ecoliteracy: Rethinking School Lunch](#) | [Edible Schoolyard Project](#) | [Food Corps](#) | [Food Empowerment Project](#) | [Jamie Oliver's Food Revolution](#) | [Let's Move Campaign: Eat Healthy](#) | [National Farm to School Network](#) | [National PTA: Nutrition](#) | [Sustainable America Blog: What is a Food Mile?](#) | [Teaching Food Systems and Sustainability in Nutrition Education and Dietetic Training](#) | [The Lunch Box](#) | [USDA Farm to School](#)



[America Walks](#) | [Bike to School Day](#) | [Clean Air Council](#) | [National Biodiesel Board: School Buses](#) | [National Safe Routes to School](#) | [On the Move: Safe Routes to School Policies in Rural School Districts](#) | [Pedestrian and Bicycle Info Center](#) | [Surface Transportation Policy Project](#) | [Walk to School Day](#)



[33 Ways to Conserve Water](#) | [NOAA: State-Based Water Resource Information](#) | [NWF: What we do to protect water resources](#) | [Ocean Conservancy](#) | [U.S.G.S. – Water Resources for the United States](#) | [U.S. EPA Climate Change & Water](#) | [U.S. EPA Watershed Webcasts](#) | [Water4Otter](#) | [Young Voices for the Planet](#)

## Resources (Continued)



**Watersheds:** [Wiki Watershed](#) | [GLOBE – Hydrosphere Investigation](#) | [Watershed Academy](#) | [The Watershed Sleuth Challenge](#) | [Gulf of Mexico Watershed](#) | [Bay Backpack – MWEE](#) | [Watershed Ag Council - NYC](#) | [Trout in the Classroom](#) | [ProjectWET](#) | [Fish to Fry – Salmon – OR](#) | [USGS Water Science School](#) | [NOAA – Watersheds, Flooding and Pollution](#) | [ITSI Watershed Studies](#) | [SciStarter – Citizen Science](#) | [North American Conservation Education: Field Investigations](#) | [Texas Living Waters Project](#)



**Oceans:** [Clean Swell](#) | [Ocean First Education](#) | [Cultivating Coastal Conservationists](#) | [Water Explorers](#) | [Marine Debris](#) | [Oil Spill Solutions](#) | [Google Earth Migration Tracking \(several marine species\)](#) | [Sharks4Kids-Educational Materials](#) | [Journey North – Whooping Crane Migration](#) | [Washed Ashore-Art Exhibits](#) | [National Marine Sanctuaries](#) | [NOAA-Marine Debris](#) | [NOAA-National Ocean Service Infographics](#) | [Coastal Resilience](#) | [National Geographic-Ocean Education](#) | [Smithsonian Institute-Ocean Portal](#) | [Tide pool Education](#)



**Wetlands:** [USGS National Wetlands Research Center](#) | [USDA-Wetlands](#) | [Project WET](#) | [Project WILD Aquatic](#) | [WOW! The Wonders of Wetlands](#) | [EPA-Wetlands](#) | [National Wetland Inventory](#) | [The GLOBE Program-Hydrosphere and Pedosphere Investigations](#) | [Ranger Rick-What is a Wetland?](#) | [Urban Wetlands](#) | [EPA-Wetlands K12 Education](#) | [Earth's Kids-Ponds and Wetland Science](#) | [Wetlands Games-Wildfowl and Wetlands Trust](#) | [Pinterest-Wetland Education Activities](#) | [Wetland Field Work Activities Educator's Guide](#)

## FAQS

### ABOUT ECO-SCHOOLS USA

#### **What is Eco-Schools?**

Eco-Schools is an international program that provides a framework to help educators integrate sustainable principles throughout their schools and curriculum. It strives to model environmentally sound practices, provide support for greening the curriculum, enhance academic achievement, and foster environmental stewardship. Three award levels – Bronze, Silver, and Green Flag – provide schools with recognition for their achievements, and students are active participants in the process.

#### **Who runs the international Eco-Schools program?**

Eco-Schools was started in 1994 by the Foundation for Environmental Education (FEE) with support from the European Commission. FEE is a non-governmental, nonprofit organization that promotes sustainable development through environmental education. It operates four other programs in addition to Eco-Schools – Young Reporters for the Environment, Blue Flag, Green Key, and Learning about Forests (LEAF).

#### **How is Eco-Schools USA related to the international Eco-Schools program?**

Eco-Schools is currently being implemented in 62 nations around the world. Eco-Schools USA is part of this successful global Eco-Schools network. Each country interprets the program according to its circumstances – for example, the large size of the United States means certain approaches that work well in smaller countries don't work here – but all programs are based on the same framework and principles.

#### **Who runs Eco-Schools USA?**

In December 2008, the National Wildlife Federation was granted host status for the Pre-K-12 Eco-Schools USA program in the United States. This responsibility fits seamlessly with NWF's commitment to promote environmental education, connect people with nature, and raise awareness about the threat to people and wildlife from global warming.

#### **What is the role of Eco-Schools USA in the larger green schools movement?**

Eco-Schools USA supports the growing movement to green schools throughout the United States and across the globe. To assist schools in achieving recognition through the federal Green Ribbon Schools program, we have developed an alignment primer between the pathways of Eco-Schools USA and the three pillars of Green Ribbon Schools. Eco-Schools USA also collaborates with a growing number of state-based green schools programs to offer co-certification and/or share resources, and has partnered with a variety of other organizations to advance the cause of greener schools.

## REGISTRATION

**How much does it cost to participate in Eco-Schools USA?**

Nothing! It's free to register for the program and utilize the Eco-Schools framework to green your school.

**How do I register my school?**

Ready to join the Eco-Schools community? Registration is easy – and free! Just [enter your school information in the registration form](#).

**How do I know if my school is already registered?**

Before completing the registration form, please be sure your school is not already enrolled. [Search the interactive map of registered schools to check](#). Our database will not allow schools to register twice.

**How do I log back in after I have registered?**

Go to the [Register](#) page and click on the "LOGIN" button on the right side of the page. You will need the email address you entered when you registered.

**What if I don't have the email address used to register my school?**

If you don't have access to the email address associated with your school's registration, contact Eco-Schools USA at [eco-schoolsusa@nwf.org](mailto:eco-schoolsusa@nwf.org) requesting this information. We will send you the email address you used to register so that you will be able to log in.

**How can I find more Eco-Schools in my region?**

Check out our [interactive map](#) to see all registered Eco-Schools and their award levels. You can see how many Eco-Schools are registered in your state and find other schools near you.

## PROGRAM STRUCTURE

**What are the Seven Steps?**

Eco-Schools USA is built on a framework of [Seven Steps](#). The framework offers a step-by-step method to implement your program, but it is a flexible process that allows you to complete each step in the way that best suits your school and situation. The Seven Steps are:

1. Establish an Eco-Action Team
2. Perform an Environmental Review / Audit
3. Develop an Eco-Action Plan
4. Monitor and Evaluate Progress
5. Link to the Educational Curriculum
6. Involve the Entire School and Larger Community
7. Create an "Eco-Code" or Mission Statement

**Is it necessary to complete the Seven Steps in order?**

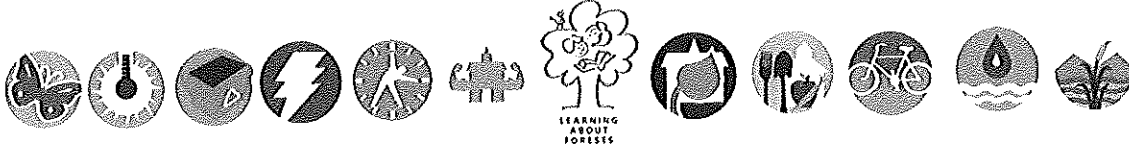
You'll find that steps 1-4 are best done in order, as each one builds upon the previous one. Steps 5-7 can be done at any point; in fact, it is best if you start working on them as soon as you begin your program.

**What are the Pathways?**

Eco-Schools USA has identified a variety of focus areas or [pathways](#) for schools to follow in their journey through the program. You will choose which pathway(s) you wish to take on. Most schools tackle just



one or two at a time. Many of the pathways overlap or are closely related, so you will likely find that by making progress in one area, you are taking steps toward improving your performance in another as well. The pathways from which you can choose are:



#### How do we earn Eco-Schools awards?

Once your school has registered and implemented the Seven Steps, you can apply for an Eco-Schools award. There are three levels of the award system: Bronze, Silver, and the highest honor, Green Flag. The Bronze and Silver levels are self-assessed. The Green Flag must be assessed by an Eco-Schools USA assessor and renewed every two years. A school is considered to be a permanent Eco-School once it has gained its fourth Green Flag. Visit our Awards page to find criteria for each award level, checklists to help you keep track of your progress, and detailed instructions for applying for an award.

#### How many Pathways must we take on?

To earn a Bronze Award, you need to complete the Seven Steps using at least one pathway. For a Silver Award, you must take on at least two pathways, and for a Green Flag, three pathways. Please note: The Energy Pathway must be addressed by every school applying for a Green Flag award.

#### Are we required to use the audits you provide?

A thorough audit of your school's current environmental performance is key to creating a plan for making improvements and monitoring your progress. For the Bronze Award level, you may use any audit you choose. For the Silver and Green Flag levels, you must use the Eco-Schools audit templates, but you can adjust them if necessary to better accommodate your students' age level and abilities and the particular circumstances at your school.

#### Do we need to do an audit of our school's total environmental performance, or just complete the audits for the pathways we are working on?

To achieve an Eco-Schools USA award, you need only complete the audit(s) for the pathway(s) you are addressing. We have also created an Environmental Review Checklist. We encourage you to use this checklist to get a "big picture view" of your school's current impact. You can use it to help you decide which pathway(s) to address and to monitor your progress from year to year.

#### Does work that we've already done to green our school count towards Eco-Schools' criteria?

Yes, it certainly can! Many of our schools start their greening process before joining Eco-Schools. There's a good chance you will find that work you've already completed aligns with one or more of the steps in the Eco-Schools framework. You'll find that Eco-Schools provides you with a method to organize your efforts and recognition to celebrate your successes.

#### How long does it generally take to achieve an award?

The time it takes to implement the program varies greatly from school to school, but generally if you are starting from scratch, you should be able to achieve an award within around 18 months. If you have already undertaken some greening projects before joining Eco-Schools, you may well be able to apply for your first award sooner than that.

### Is Eco-Schools USA aligned with national education standards?

Yes, it is. To assist educators in weaving the Eco-Schools USA program into their existing curriculum, each of the Eco-Schools USA pathways has been aligned to the National Science Education Standards from which all states base their standards as well as the Next Generation Science Standards (NGSS) and the Common Core Standards. Access the [standards alignment here](#).

## TIPS AND SUPPORT

### Why should we participate in Eco-Schools USA?

Whether you are a teacher, student, administrator or facilities manager, the Eco-Schools USA program can benefit your school and local community. The Eco-Schools program is designed in a way that:

- Improves academic performance, especially in science and math
- Leads to financial savings for schools
- Decreases a school's carbon footprint through practical solutions that reduce energy and water consumption
- Reduces school waste and conserves natural resources
- Encourages environmental awareness and stewardship
- Increases parental involvement
- Helps students and teachers develop stronger relationships with their communities
- Fosters global understanding and national and international connections

To find out more about the benefits of being an Eco-School, visit our [benefits page](#).

### Is my school ready to join Eco-Schools USA?

To successfully implement the Eco-Schools program, here's what you need:

- 1) The support of your administration.
- 2) A group of students, teachers and other school staff who are eager to implement the program.

If just one person is ready to champion the program, that's a starting place, but you'll want to get other people on board as soon as possible. That's all that's really necessary to begin! The rest will come as you work through the Seven Steps. See below for more tips on gathering support for your program.

### How can I persuade my administration and colleagues that we should participate?

In addition to environmental stewardship, Eco-Schools USA can help your school achieve a variety of goals, from financial savings to improved academic performance and student engagement. Visit our [benefits page](#) to gather the facts, and then consider which goals will be most motivating to your administrators and colleagues. Emphasize these points as you explain the program to help you make a case for becoming an Eco-School. You may also want to look at our [case studies](#) for examples of what other Eco-Schools have achieved as they have implemented the program.

### How do we involve the whole school?

While the Eco-Action Team provides a great opportunity for some students to get deeply involved in the Eco-Schools process, your goal should be to involve the entire student body in meaningful ways. You'll find a variety of ideas under [Step 6: Involve the Community](#). Here are just a few tips to get you started:

- Ensure that all interested students have an opportunity to serve on the Eco-Action Team or subcommittees working on specific projects.
- Communicate your Eco-Schools activities and achievements regularly, perhaps at school assemblies, on a bulletin board or display in a central location, or on the school's website.

- Hold a contest to create the school's Eco-Code.
- Develop an outdoor classroom and gardens on the school grounds and encourage all teachers to make use of them for hands-on lessons.
- Find ways to divide up at least some of your Action Plan items so all classrooms can participate. For example, if your goal is to reduce electricity use, have each classroom implement a plan to check that lights are off and electronics shut down when the room is unoccupied.

#### **What are the best ways to involve parents and the rest of the community?**

There are many ways to expand your Eco-Schools work to engage a wider network, and many benefits to doing so. See Step 6: Involve the Community for suggestions. For example:

- Communicate your Eco-Schools activities and achievements to parents and the community through a variety of media, such as school newsletters, stories in local news sources, and community calendars.
- Look for ways to tap into the interests and skills that parents and community members can bring to your projects. Ask for volunteers to serve on your Eco-Action Team and to help with specific projects. For example, an energy engineer could help assess opportunities for energy conservation, a carpenter might be able to assist with constructing raised garden beds or compost bins, and an avid gardener could help choose plants and create a maintenance plan.
- Hold work bees, information fairs, or celebrations and invite the whole community to participate.

#### **Where can we find funding and other support for our projects?**

When it comes to greening your school, you can take many actions that will make a big impact but cost little or no money. When you do need funding, creativity is the key to finding the support you need. Applying for grants is one excellent way to fund projects. Also, don't overlook local businesses or organizations that might be willing to donate money or materials to support your efforts. Consider asking school alumni to contribute to the cause. You might also be able to team up with other groups in your area to get expertise and volunteers to help you carry out projects. For instance, perhaps a local conservation group would assist with invasive species removal and habitat restoration, a local nursery would donate native plants, and a scout troop would build nesting boxes to install in the new habitat.

#### **How can we get recognition for our accomplishments?**

Eco-Schools USA gives awards to recognize your achievements in the program, and you can display your Bronze or Silver Award certificate or Green Flag proudly. You can also print participation certificates to honor the contributions of students and volunteers. But there are many other ways to get the recognition your hard work deserves. Contact local media – your newspaper, television station, or radio station – and invite them to cover your activities and the awards you achieve. Be sure to include information about your Eco-Schools activities in school newsletters and on your website. Share your work via social media. Reach out to other Eco-Schools in your area to share and celebrate successes.

#### **Is there a way to get ideas from other schools' experiences?**

Yes! Check out our case studies for lots of information and inspiration. You can learn a lot – and save time and trouble – by reading about other schools' challenges and successes and making good use of the hard-earned knowledge they've shared.

## FURTHER INQUIRIES

### **Do you have a newsletter?**

Yes, we post an e-newsletter 10 times a year that lists program updates, resources, grants and contests, and lots of other useful information. You can [sign up to receive an email with the newsletter link here.](#)

### **Can we communicate with other Eco-Schools to share advice?**

If you'd like to share ideas or get tips from another school in your area (or anywhere else), use our [interactive map](#) to search for schools. Click on the school name for the coordinator's contact information.

### **Can we get matched with a "sister" Eco-School in another country?**

A system for making international connections is in the works. Until it is up and running, we may be able to help you. On the international Eco-Schools website, take a look at the [list of participating countries.](#) Then email the Eco-Schools USA team to let us know which country or countries you are most interested in connecting with, and we will contact the countries' coordinators to see if we can arrange a match for you.

### **If we have another question, how can we contact you?**

Email the Eco-Schools USA team at [eco-schoolsusa@nwf.org](mailto:eco-schoolsusa@nwf.org).

## Who We Are

### National Team

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### Regional Contacts

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#### Affiliate Partnership

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## Eco-Schools USA Toolkit

Here you will find links to many of the most commonly used forms and summary documents utilized by Eco-Schools around the nation. The [toolkit page](#) can now be found on our website. Form updates and additions will be completed quarterly. Please [bookmark this page](#) for future ease of access.

### General Eco-Schools USA Information

- ✓ [Sample Eco-Schools USA Timeline](#)
- ✓ [Eco-Schools USA Parent Fact Sheet](#)

### Seven Step Framework

- ✓ [Eco-Action Team Planning Worksheet](#)
- ✓ [Environmental Review Checklist](#)
- ✓ [Sample Eco-Action Plan Biodiversity](#) – specific plans are found under each Pathway)
- ✓ [Blank Eco-Action Plan worksheet](#)
- ✓ [Environmental Audit\(s\)](#) – Pathway specific audits found on this page
- ✓ [Seven Steps and Awards Summary Document](#)

### Award Checklists and Criteria

Award Checklists (printable documents to track progress)

- ✓ [Bronze Award](#)
- ✓ [Silver Award](#)
- ✓ [Green Flag](#)

Award Criteria (informational list of criteria along with point value)

- ✓ [Bronze Award](#)
- ✓ [Silver Award](#)
- ✓ [Green Flag](#)

Award Application Forms

- ✓ [Link to Green Flag application and renewal forms on this page](#)

Sample Press Release

- ✓ [Bronze Award](#)
- ✓ [Silver Award](#)
- ✓ [Green Flag](#)