SIMAP and Second Nature Webinar: Reporting

Alley Leach & Andy DeMeo
April 20th, 2021
● SIMAP background
● Second Nature background
● Transferring your SIMAP data to the Second Nature Reporting Platform
● Q&A
What is SIMAP?

A carbon and nitrogen accounting platform that can track, analyze, and improve your campus-wide sustainability

SIMAP combines two tools:

**C**
- Developed in 2001 at UNH
- Excel and web version
- Used by thousands of institutions

**N**
- Developed in 2009 at UVA
- Excel-based
- Used by 20 institutions
- Completed pilot testing
How does SIMAP work?

Enter your activity data:

**Scope 1**
- On campus stationary
- Direct transport
- Refrigerants
- Agricultural sources
- other

**Scope 2**
- Electricity
- Steam
- Chilled water
- Renewable energy

**Scope 3**
- Commuting
- Business travel
- Food
- Paper
- Wastewater
- other

*STARS credit for GHG inventory, N footprint (exemplary practice), air quality (NOx emissions), purchased goods (food), third party GHG inventory review (Data Review)*
Steps for calculating your campus’ footprints

1. Account tab: Enter your institution information
2. Data entry tab or data import: Enter your inventory data
3. Data Mgmt tab: Select methods
4. Results tab: View your results
5. Reports tab: View ‘packaged’ results
SIMPLIFYING SUSTAINABILITY DECISIONS

SIMAP® is a carbon and nitrogen-accounting platform that can track, analyze, and improve your campus-wide sustainability. Our proven algorithms, based on nearly two decades of work supporting campus inventories with the Campus Carbon Calculator, CarbonMAP and Nitrogen Footprint Tool, will help you:

- Create a baseline
- Benchmark your performance
- Create reports
- Set goals
- Analyze your progress year over year

GET STARTED!

YOUR CAMPUS FOOTPRINT

6 C
CARBON

7 N
NITROGEN

CO2 emissions from generating power, treating waste, daily commuting, and even the use of paper, contribute to a campus’ carbon footprint. Reducing these greenhouse gas emissions will help slow the effects of climate change and global warming.

Reactive nitrogen can result from everyday activities like food service, energy use, transportation, and ground fertilizer. Reducing your nitrogen footprint can provide benefits to air quality, water quality, and climate change.
Enter basic information about your campus on the institution page (e.g., institution type, zip code)

Enter normalizations data here
Two options for entering your data:

1) Data Entry tab - Individual data points, years
2) Import data on the Data Entry tab - Bulk data entry using the Data Collection Template from the Resources tab > Tools page
A unique value for scaling emissions to activity data in terms of a standard rate of emissions per unit of activity (e.g., grams of carbon dioxide emitted per barrel of fossil fuel consumed).

**Scope**
- 1

**Source**
- Direct Transportation Sources: University Fleet; Gasoline Fleet

**Emission Type**
- CO2

**Reference:** Direct Transportation Sources: University Fleet; Gasoline Fleet (CO2)

Note: Customizations are to this EF version only. More information on EF versions.

<table>
<thead>
<tr>
<th>Year</th>
<th>Default</th>
<th>Unit</th>
<th>Custom</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>8.906920</td>
<td>kilogram CO2 / US gallon</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>8.906920</td>
<td>kilogram CO2 / US gallon</td>
<td></td>
</tr>
</tbody>
</table>

View and edit emission factors on the Data Entry tab
### Calculation Sources and Methods

<table>
<thead>
<tr>
<th>Source Type</th>
<th>Version</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factors Version</td>
<td>2020 (recommended)</td>
<td>More information on EF versions</td>
</tr>
<tr>
<td>Global Warming Potential Version</td>
<td>AR5 100-year (recommended)</td>
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<td>BTS (recommended)</td>
<td>More information on air travel cost version</td>
</tr>
<tr>
<td>Radiative Forcing Factor</td>
<td>2.7 (recommended)</td>
<td>More information on radiative forcing factor</td>
</tr>
<tr>
<td>Scope 2 Method</td>
<td>Market-Based, Location-Based, Custom Fuel Mix</td>
<td>More information on scope 2 methods</td>
</tr>
<tr>
<td>Include in Second Nature API</td>
<td></td>
<td>eGrid map for years &gt;= 2007</td>
</tr>
</tbody>
</table>
Use the Results tab to see your results with different views (e.g., gross footprint, scopes)

Filter by campus, tags, and year

Select normalizations (e.g., population, GSF)
The Gross Footprint graph shows your gross emissions, sinks, biogenic emissions, and non-additional sequestration all on one graph.
The Net Footprint graph shows your campus' net footprint (i.e., gross emissions minus sinks).

**Carbon**

- Biogenic
- Net MTCDE

**Nitrogen**

- Net N
The Categories graph shows your gross emissions organized by category (e.g., stationary fuels). Sinks are not included.
View reports that package your results by specific topics.

This is where you can view the Second Nature report!
Why do a Data Review with the SIMAP team?

- Structured and systemic evaluation of your data in SIMAP, your results, and any imported files
- Identifies outliers, gaps, inconsistencies, and errors
- Includes a 1-hour video call to discuss your inventory
- Earn 0.625 AASHE STARS points as an independent validation/verification of your institution’s GHG inventory!

Check out a 5-minute video about Data Reviews, which can be found on the Data Review page and the Training page.
Mission

Second Nature’s mission is to accelerate climate action in, and through, higher education
Climate Leadership History

- **2006**: Climate Commitment emerges as ACUPCC with 12 Founding Signatories.
- **2008**: ACUPCC is a national initiatives with signatories from all 50 states.
- **2010**: ACUPCC is a Second Nature initiatives annual Climate Leadership Summit, gives awards recognizing ACUPCC institutions for their innovation and excellence.
- **2011**: Second Nature becomes only supporting organization for ACUPCC.
- **2015**: Second Nature rebrands and expands ACUPCC to Climate Leadership Network including three President’s Climate Leadership Commitments.
The Presidents’ Climate Leadership Commitments

- **Carbon Commitment**: Eliminating operational greenhouse gas emissions and achieving carbon neutrality as soon as possible.

- **Resilience Commitment**: Formalizing community partnerships to assess climate vulnerabilities and to create a plan to build capacity to deal with a changing climate.

- **Climate Commitment**: Integrates carbon neutrality with climate resilience

*Shared elements of all three commitments: integration of climate action into education curriculum, expanding research efforts, public reporting, and creating and revising a climate action plan.*
Climate Leadership Summit

- Previous Summits
  - Tempe, AZ
  - Atlanta, GA
2021 Climate Action Pursuit

• Remote pursuit will address learning, planning, acting, and leading on climate and justice on campuses, in our communities, and across our social and economy

• Milestone check-in points—February, June, October, and December 2021—to give participants the tools and peer-support to accomplish their climate, resilience, and justice goals.
Solutions Center

Identification, assessment, and ranking of campus climate solutions for decision makers to prioritize and accelerate climate action.
Solutions Center

Carbon Offsets

Carbon Offsets

A carbon offset is a tradable instrument that represents the reduction or removal of one metric tonne of carbon dioxide equivalent. Carbon offsets fund projects that reduce greenhouse gases, ranging from reforestation to renewable energy investments. Offsets can be bought and sold to transfer climate benefit between entities. Carbon offsets represent a unit of carbon dioxide equivalents and are different from RECs.

**Benefits**

- Easy short term solution to reach carbon neutrality.
- When done correctly, offsets can fund sustainable projects worldwide.
- Offsets are a mechanism to fund the most cost efficient emissions reductions, regardless of location.

**Challenges**

- Offsets can be hard to manage and money may be lost to the middleman.
- Additionality is hard to quantify.
- If projects are far from campus, there may not be a strong connection to the institution.

**Carbon Offsets**

**IMPACTS**

**EXPERTS**

Ruby Woodside
Senior Manager, Climate Programs
Second Nature

**RESOURCES**

- GHG Management Institute: Carbon Offset Guide
- Cool Effect: Universities and Carbon Credits
- Duke Carbon Offsets Project Snapshot
Solutions Center Pro-bono Consulting

- Advance efforts on campus to reduce/eliminate CO2 emissions & decrease operating costs
- Application requires background research and communication with stakeholders to gain buy-in and support
- Six campuses receive pro-bono advisory services worth $7,500-$10,000
Climate Solutions Acceleration Fund

Launched in 2020, the Acceleration Fund is dedicated to supporting innovative cross-sector climate action activities driven by colleges and universities.
Reporting Platform

Emissions over Time

Percent Change in Greenhouse Gas Emissions 2018 vs. Baseline 2015 and Emission Reduction Target Goals

<table>
<thead>
<tr>
<th></th>
<th>TOTAL SCOPE 1</th>
<th>TOTAL SCOPE 2</th>
<th>TOTAL SCOPE 3</th>
<th>TOTAL SCOPE 1 &amp; 2</th>
<th>TOTAL SCOPE 1, 2 &amp; 3</th>
<th>TOTAL NET</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGE IN EMISSIONS PER 1,000 SQ. FT.</td>
<td>100.00%</td>
<td>100.00%</td>
<td>145,938.25%</td>
<td>100.00%</td>
<td>668,679.38%</td>
<td>61.18%</td>
</tr>
<tr>
<td>CHANGE IN EMISSIONS PER FULLTIME ENROLLMENT</td>
<td>100.00%</td>
<td>100.00%</td>
<td>27,775,617.20%</td>
<td>100.00%</td>
<td>127,216,584.03%</td>
<td>3,570.07%</td>
</tr>
</tbody>
</table>

EMISSION REDUCTION TARGETS

Percent Change in Greenhouse Gas Emissions 2018 vs. Baseline 2008 and Emission Reduction Target Goals

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<th>TOTAL SCOPE 1</th>
<th>TOTAL SCOPE 2</th>
<th>TOTAL SCOPE 3</th>
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<th>TOTAL SCOPE 1, 2 &amp; 3</th>
<th>TOTAL NET</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGE IN EMISSIONS PER 1,000 SQ. FT.</td>
<td>2.09%</td>
<td>42.40%</td>
<td>33.86%</td>
<td>10.98%</td>
<td>37.14%</td>
<td>28.20%</td>
</tr>
<tr>
<td>CHANGE IN EMISSIONS PER FULLTIME ENROLLMENT</td>
<td>18.82%</td>
<td>52.25%</td>
<td>15.80%</td>
<td>45.62%</td>
<td>41.42%</td>
<td>38.88%</td>
</tr>
</tbody>
</table>

EMISSION REDUCTION TARGETS

50% by 2022

Membership – Ratings

STARS RATING
Silver

GRITS
Yes
Tools & Resources

Sustainable Energy as a Service:
Why Campuses Are Choosing to Own the Solution, not the Equipment

OCT 22, 2020

Webinars

The Implementer:
Second Nature's Monthly E-Newsletter

Newsletter
Tools & Resources

Toolkits

Carbon Credit and Purchasing Program (C2P2)
University Climate Change Coalition (UC3)

- **Coalition** of World's leading research universities in North America
- Members pledge to reduce their institutional carbon footprints, commit to convening a cross-sector climate forum in their community, and participate in network activities.
- Webinars, Panel Discussions, Assisting local communities
Offset Network

- Develop criteria for reviewing peer-reviewed offset projects
- Organized network of individuals and institutions who can review projects
- Share case studies of existing offset projects and protocols
Non Profit Partnerships

Sustainability Indicator Management and Analysis Platform

Intentional Endowments Network

Sustainability is the bottom line.
Transferring your SIMAP data
to the Second Nature Reporting Platform
Steps to confirm before you can transfer your data

1. Account tab: Enter your API key
2. Data Mgmt tab: Confirm required methods selections:
   - 2020 version of emission factors
   - Market-based scope 2 method
4. Data Mgmt tab - Status page: Mark the year as complete
1. Account tab: Enter your API key

Your API key can be found in the Second Nature Reporting Platform
2. Data Mgmt tab: Confirm required methods selections

**Calculation Sources and Methods**

- **Emission Factors Version**
  - 2020 (recommended)
  - More information on EF versions

- **Global Warming Potential Version**
  - AR5 100-year (recommended)
  - More information on GWP versions

- **Air Travel Cost Version**
  - BTS (recommended)
  - More information on air travel cost version

- **Radiative Forcing Factor**
  - 2.7 (recommended)
  - More information on radiative forcing factor

- **Scope 2 Method**
  - Market-Based
  - Location-Based
  - Custom Fuel Mix
  - More information on scope 2 methods

**Required methods:**
- Current version of emission factors (2020)
- Market-based scope 2 method

Confirm your results are correct

<table>
<thead>
<tr>
<th>Categories</th>
<th>Source</th>
<th>CO2 (kg)</th>
<th>CO2 (MTCDE)</th>
<th>CH4 (kg)</th>
<th>CH4 (MTCDE)</th>
<th>N2O (kg)</th>
<th>N2O (MTCDE)</th>
<th>GHG MTCDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fugitive Emissions</td>
<td></td>
<td>0</td>
<td>0.00</td>
<td>62,720</td>
<td>1,756.16</td>
<td>676</td>
<td>179.12</td>
<td>2,362.07</td>
</tr>
<tr>
<td>Mobile Combustion</td>
<td></td>
<td>2,169,865</td>
<td>2,169.66</td>
<td>174</td>
<td>4.88</td>
<td>41</td>
<td>10.78</td>
<td>2,185.32</td>
</tr>
<tr>
<td>Stationary Combustion</td>
<td></td>
<td>14,909,069</td>
<td>14,909.06</td>
<td>8,330</td>
<td>233.23</td>
<td>4,318</td>
<td>1,144.34</td>
<td>16,286.63</td>
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<tr>
<td>Air Travel</td>
<td></td>
<td>5,318,584</td>
<td>5,318.58</td>
<td>58</td>
<td>1.63</td>
<td>61</td>
<td>16.09</td>
<td>5,336.31</td>
</tr>
<tr>
<td>Commuting</td>
<td></td>
<td>8,387,763</td>
<td>8,387.76</td>
<td>447</td>
<td>12.52</td>
<td>273</td>
<td>72.45</td>
<td>8,472.73</td>
</tr>
</tbody>
</table>

Second Nature Report

What methods are required for Second Nature reporting?

Second Nature requires that you use the Market-Based Scope 2 Method and the recommended EF version (2019). You will need to make these selections to view your data on the Second Nature Report AND to export your data to Second Nature's Reporting Platform with the API. To change to the recommended scope 2 and EF version, please visit the calculation sources and methods form.

How does my data get from SIMAP to the Second Nature reporting system?

SIMAP generates a report specific to Second Nature reporting under the Reports tab. After you use SIMAP to calculate your emissions data, you can go to the Second Nature reporting system and pull your data in from SIMAP. We call this the Second Nature API. See this document for detailed instructions on how to use the Second Nature API.

A complete set of the data points transferred via the API can be found in these instructions and on the reports tab when 'Second Nature' is selected from the reports drop-down. The data points transferred with the API include:

- Scope 1 emissions (stationary combustion, mobile combustion, fugitive emissions)
- Scope 2 emissions (purchased electricity, cooling, and steam)
- Some scope 3 emissions (commuting, air travel [including both directly financed and study abroad air travel])
- Total purchased electricity consumption and thermal energy consumption
- Renewable energy purchases and whether those credits were retained
- Gross square feet of building space
- Total student enrollment (FTE)

Please note that several data points that are entered into SIMAP and can also be entered in the Second Nature reporting system are not transferred via the API. Those data points include:

- Biogas footprint
- Purchased and sold offsets
- Carbon sequestration
- Some demographic information (e.g., detailed populations, gross square footage)
- Purchased goods (scope 3, such as paper, food)
- T&D losses from electricity (scope 3)
Mark years as complete so they are available for the API transfer.
## Percent Change in Greenhouse Gas Emissions 2018 vs. Baseline 2015 and Emission Reduction Target Goals

<table>
<thead>
<tr>
<th>Emmission Type</th>
<th>Total Scope 1</th>
<th>Total Scope 2</th>
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<tr>
<td>Change in Emissions</td>
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<td>Per 1,000 SQ. FT.</td>
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<td>100.00%</td>
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<td>100.00%</td>
<td>127,216,587.03%</td>
<td>3,578,072%</td>
</tr>
<tr>
<td>Per Fulltime Enrollment</td>
<td>100.00%</td>
<td>100.00%</td>
<td>2,920,685.00%</td>
<td>100.00%</td>
<td>13,373,497.50%</td>
<td>166.72%</td>
</tr>
</tbody>
</table>

## Institutional Information

**SIGN DATE:** Dec 7, 2015  
**PRESIDENT:** Clark A Kent  
**IMPLEMENTATION LIAISON:** Andrew Delalas  
**SUSTAINABILITY WEBSITE:** Link

## Membership - Ratings

<table>
<thead>
<tr>
<th>STARS RATING</th>
<th>CRIS ?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>Yes</td>
</tr>
</tbody>
</table>

## Dues

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AMT DUE</th>
<th>AMT PAID</th>
<th>STATUS</th>
<th>LEadership Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>$225</td>
<td>$225</td>
<td>Paid</td>
<td></td>
</tr>
</tbody>
</table>

## Reports

- **尽快** PROFILE
- **尽快** CAMPUS/COMMUNITY STRUCTURE
- **尽快** ANNUAL PROGRESS EVALUATION |
- **尽快** RESILIENCE ASSESSMENT
- **尽快** CLIMATE ACTION PLAN

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https://reporting.secondnature.org/home/
Please contact reporting@secondnature.org to request a draft legacy GHG report and/or to upload a new CAP.

1. Methodology & Boundaries

Start date of the 12-month period covered in this report: 07/01/2019

Consolidation methodology used to determine organizational boundaries:
Operational control approach

If any institution-owned, leased, or operated buildings or other holdings that should fall within the organizational boundaries are omitted, briefly explain why.

Emissions calculation tool used: SIMAP

Please describe why this tool was selected

Here is your Second Nature API key: d4a1b652228c0517708ed300099bb

Which version of IPCC’s list of global warming potentials did you use?
Third Assessment Report

Who primarily conducted this emissions inventory?

Please describe the process of conducting the inventory.

Please describe any emissions sources that were classified as de minimis and explain how a determination of the significance of these emissions was made.

Please describe any data limitations related to this submission and any major assumptions made in response to these limitations.
Annual Progress Evaluation for Second Nature-Training, 2020

1. Methodology & Boundaries

Start date of the 12-month period covered in this report: 07/01/2019

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Emissions calculation tool used: SIMAP

Which version of IPCC's list of global warming potentials did you use?

Third Assessment Report

Who primarily conducted this emissions inventory?

Class

Please describe the process of conducting the inventory.

Please describe any emissions sources that were classified as de minimis and explain how a determination of the significance of these emissions was made.
Video tutorial on API transfer
Working groups

**Commuting Working Group**
Co-facilitated with Second Nature

**Biogenic Working Group**
Co-facilitated with Second Nature

**Nitrogen Working Group**
Co-facilitated with University of Virginia
## Summary

<table>
<thead>
<tr>
<th>SIMAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>● SIMAP can help you calculate your campus’ carbon and nitrogen footprints</td>
</tr>
<tr>
<td>● Key methods required for the API transfer (EF version, scope 2 method, mark as complete)</td>
</tr>
<tr>
<td>● We are here to help! Contact us at <a href="mailto:simap@unh.edu">simap@unh.edu</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Second Nature’s mission is to accelerate climate action in and through higher education</td>
</tr>
<tr>
<td>● Contact us if you’d like to learn more about any of our initiatives or services! <a href="mailto:ademeo@secondnature.org">ademeo@secondnature.org</a></td>
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Questions?

www.secondnature.org
Contact: reporting@secondnature.org

www.unhsimap.org
Contact: simap@unh.edu