

Waste Map

Global Landfill and Waste Dump Tracking Projects

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Global Plastic Watch

Global Plastic Watch (GPW) <https://globalplasticwatch.org/>

Global Plastic Watch project is an innovative initiative designed to map and track plastic pollution across the globe, primarily focusing on plastic waste hotspots. It uses advanced satellite imagery and artificial intelligence (AI) to detect plastic waste sites, especially those near water bodies and coastal areas, which are significant contributors to ocean plastic pollution.

Key Features of the Global Plastic Watch (GPW) Project:

- **Satellite-Based Detection:** GPW uses high-resolution satellite imagery from platforms like Planet Labs and European Space Agency (ESA) to monitor and map large areas of land, including remote regions. The images are analyzed using machine learning algorithms to identify potential plastic waste sites. This allows for detecting illegal or unregulated dumpsites that might otherwise go unnoticed.
- **AI and Machine Learning Integration:** The project leverages AI and machine learning models trained to recognize plastic waste from satellite images. These models are continuously improved as more data is gathered, allowing for better identification of plastic accumulation areas over time.
- **Global Coverage:** The platform provides global coverage, making it one of the most extensive tools for detecting plastic pollution hotspots across continents. Its focus includes both urban and remote regions, particularly in developing countries, where plastic waste management infrastructure might be lacking.
- **Real-Time Monitoring:** GPW allows for real-time or near-real-time monitoring of plastic waste sites. This enables rapid response from governments, NGOs, and environmental agencies when new illegal dumpsites are detected or when existing ones grow.
- **Publicly Accessible Data:** One of the unique aspects of GPW is its commitment to open data. The platform provides free access to its maps and findings, making it easier for policymakers, environmental organizations, and the general public to take action against plastic pollution. The interactive maps allow users to zoom in on specific regions and see identified plastic pollution sites.
- **Partnerships and Collaborations:** GPW collaborates with a wide range of partners, including government agencies, non-governmental organizations (NGOs), academic institutions, and private-sector companies. These partnerships help amplify the project's impact by combining technology with on-the-ground efforts to address the root causes of plastic waste.
- **Impact on Policy and Advocacy:** The data generated by GPW can inform policy decisions and regulatory efforts to combat plastic pollution. By

providing clear evidence of where plastic waste is accumulating, governments can implement targeted waste management policies, improve recycling infrastructure, and enforce stricter regulations on illegal dumping.

- **Focusing on River and Coastal Regions:** GPW places particular emphasis on rivers and coastal regions, which are major pathways through which plastic enters the oceans. By identifying plastic waste in these areas, the project can help mitigate the flow of plastic into marine ecosystems, where it causes significant harm to wildlife and human health.

Goals of the Global Plastic Watch Project:

- **Reduce Plastic Pollution:** By identifying and tracking plastic waste sites globally, the GPW project aims to significantly reduce plastic pollution, particularly in areas that contribute heavily to marine plastic.
- **Support Governments and Local Communities:** The project provides actionable data to governments, local authorities, and environmental organizations, helping them implement effective waste management practices.
- **Raise Awareness:** GPW's public platform helps raise awareness about the global plastic waste crisis, inspiring both local and international efforts to address the issue.

How to Access GPW:

The Global Plastic Watch platform can be accessed via its official website, where users can explore the interactive map of plastic waste sites globally. It is designed to be user-friendly, allowing anyone from environmentalists to policymakers to use the data for research and action.

Example Applications:

- **Local Action:** Local governments can use the data to identify illegal dumping sites and improve waste collection and recycling infrastructure.
- **Research:** Environmental scientists and researchers can study the extent and trends of plastic pollution across various regions.
- **NGO Activism:** NGOs focused on environmental protection can use the platform to identify plastic pollution hotspots and advocate for cleanup efforts.

Waste Atlas

Waste Atlas <http://www.atlas.d-waste.com/>

The Waste Atlas project is an open-source platform that provides global data and insights about waste management, including waste generation, treatment, and disposal. It was created by D-Waste, a consultancy firm specializing in waste management, in collaboration with several partners including universities, NGOs, and professionals in the waste sector.

Key Features of the Waste Atlas Project:

- 1. Global Waste Data:** Waste Atlas compiles data from various sources to provide a broad picture of waste generation and management in countries around the world. It includes data on:
 - Waste generation per capita (how much waste people generate daily),
 - Waste composition (types of waste like organic, plastic, glass, etc.),
 - Waste management practices (landfilling, recycling, composting, etc.),
 - Landfill locations and capacities (focusing on regulated landfill sites).
- 2. Open-Access and User-Friendly:** The platform aims to make waste data more accessible to the public. It's designed as a user-friendly, open-access tool where individuals, researchers, and organizations can explore waste-related data and visualize it through an interactive map.
- 3. Interactive Waste Map:** Waste Atlas provides an interactive global map where users can explore waste statistics for different countries and regions. It allows you to compare countries based on various waste-related indicators like waste generation rates, treatment methods, and recycling performance.
- 4. Focus on Municipal Solid Waste (MSW):** The main focus of Waste Atlas is municipal solid waste (MSW), which includes everyday waste generated by households, businesses, and institutions. This differs from specialized forms of waste like hazardous or medical waste, though some data on hazardous waste might be available.
- 5. Country Profiles:** Waste Atlas provides detailed country profiles where users can see key statistics and trends related to waste management for individual countries. This includes information like:
 - Waste generation per capita,
 - Percentage of waste that is recycled, composted, or landfilled,
 - Methane emissions from waste,
 - Economic indicators related to waste management.
- 6. Comparative Analysis:** Users can compare waste data between countries, helping to identify trends, challenges, and best practices in waste management.

For example, countries with high recycling rates or innovative waste-to-energy technologies can be benchmarked against those with higher landfill dependency.

7. Partnerships and Data Sources: Waste Atlas aggregates its data from a wide range of data sources, including official government reports, the World Bank, UNEP, and peer-reviewed research studies. This diverse range of sources helps ensure the platform is comprehensive and up-to-date.

8. Waste Management Case Studies: The platform also features case studies that showcase waste management systems in specific cities or countries. These case studies provide detailed insights into how different regions are tackling waste management challenges, offering inspiration for similar projects globally.

How Waste Atlas Can Be Used:

1. For Policy Makers: Waste Atlas serves as a valuable tool for policymakers looking to design or improve waste management systems. By analyzing global trends and successful case studies, governments can make informed decisions about waste treatment, recycling, and reducing landfill dependence.

2. For Researchers and Academics: The platform is often used by researchers studying global waste trends. It provides a wealth of quantitative data, allowing for analysis of correlations between waste generation, GDP, urbanization, and other factors.

3. For NGOs and Environmental Advocates: NGOs can use Waste Atlas to track waste-related challenges globally and advocate for better waste management practices. By identifying regions that face significant waste management issues, they can prioritize action and raise awareness about the need for improved waste infrastructure.

4. For Businesses and Consultants: Companies in the waste management sector can use the data for market research, understanding trends in different regions, and identifying potential investment opportunities in waste infrastructure and technologies.

Limitations:

- Data Gaps: Since Waste Atlas relies on a variety of data sources, some countries, particularly in developing regions, may have incomplete or outdated data due to a lack of consistent waste management reporting.

- Focus on Municipal Waste: While it provides in-depth information on municipal solid waste, Waste Atlas does not extensively cover specialized waste streams like e-waste or industrial waste.

Example Insights from Waste Atlas:

- Top Waste-Generating Countries: The platform shows which countries generate the most waste per capita, with many developed countries like the U.S. and Canada ranking high in waste production.

- Recycling and Composting Leaders: Countries like Germany and South Korea, known for their high recycling rates, are featured as case studies for

successful waste diversion practices.

- Methane Emissions from Landfills: It also highlights the environmental impact of landfills, particularly in developing countries where landfill management is often poor, leading to high methane emissions.

Crowdsourced Mapping Platforms

TrashOut <https://www.trashout.ngo/>

TrashOut is a global, crowdsourced environmental project aimed at identifying and mapping illegal waste dumps worldwide. The project was developed as a mobile and web application, allowing users to report and locate illegal dumping sites, contributing to a cleaner and more sustainable environment. TrashOut encourages individuals to become environmental stewards by actively participating in waste monitoring and removal efforts.

Key Features of the TrashOut Project:

1. **Crowdsourced Mapping of Illegal Dumps:** TrashOut relies on its users to report illegal waste dumps. By using the mobile app, people can take photos of dumpsites they encounter, provide a description, and submit their reports. These reports are then mapped in real-time on an interactive platform that anyone can access to view illegal waste dump locations.
2. **Global Coverage:** TrashOut has a global reach, with users from all over the world contributing to the map. Although coverage and accuracy may vary depending on the region, it offers an open, citizen-driven solution to monitor waste in urban and remote areas.
3. **Data for Governments and Organizations:** TrashOut's data can be shared with local governments, NGOs, and environmental organizations to help inform waste management policies and cleanup initiatives. Municipalities can use the data to plan cleanup operations, identify hotspots for illegal dumping, and improve waste disposal systems.
4. **Offline Reporting:** The app allows users to report illegal dumps even when they don't have internet access. Users can save the report and upload it once they are back online. This feature is particularly useful for tracking dumps in remote areas where connectivity may be limited.
5. **User-Friendly Interface:** TrashOut's mobile app is designed to be intuitive and easy to use, making it accessible to anyone. Users simply:
 - Open the app,
 - Pinpoint the location of the dump on the map,
 - Provide details like the type of waste and the size of the dump,
 - Upload a photo, and
 - Submit the report.

6. **Educational and Awareness Tool:** In addition to reporting dumpsites, TrashOut aims to raise awareness about illegal dumping and waste management issues. The platform provides educational materials and encourages communities to take action against waste pollution by organizing local cleanups.

7. **Partnerships and Support:** TrashOut collaborates with various partners, including governments, municipalities, NGOs, and environmental organizations, to use its data for organizing waste collection efforts and promoting sustainable waste management practices. This makes the platform an important tool for cities and regions with limited resources for monitoring illegal dumping.

8. **Progress Tracking and Follow-Up:** Once a dump site is reported, users and authorities can track the status of the site. After the site is cleaned up, the status can be updated to reflect that the dump has been removed. This follow-up process ensures that the platform provides up-to-date and actionable information.

9. **Environmental and Social Impact:** By involving communities in reporting illegal dumping, TrashOut empowers citizens to take responsibility for their local environment. This contributes not only to cleaner public spaces but also to broader goals of reducing pollution, protecting wildlife, and preventing hazardous waste from contaminating ecosystems.

How TrashOut Can Be Used:

1. **For Citizens:** Individuals can use TrashOut to easily report illegal dumps in their neighborhoods. The app helps bring attention to waste problems and encourages people to be proactive in cleaning up their communities.

2. **For Governments and Municipalities:** Local authorities can use the data collected via TrashOut to identify problem areas, plan waste management interventions, and engage with communities to prevent future dumping.

3. **For Environmental NGOs:** NGOs working on waste management and pollution control can leverage TrashOut's data to inform their campaigns and organize cleanups in high-priority areas. They can also use the platform to promote community engagement in tackling waste-related issues.

4. **For Businesses:** Companies involved in waste collection, recycling, or environmental consulting can use the data to identify potential clients, locate problematic areas, and offer solutions for waste reduction.

Successes and Impact:

- **Global Adoption:** TrashOut has seen participation from users worldwide, particularly in Europe, Africa, and Latin America. By allowing people to easily report illegal dumps, the platform has created a vast database of dumpsites that can help authorities prioritize cleanup efforts.

- **Awareness and Cleanup Campaigns:** The app has been used to support large scale cleanup campaigns, often organized in collaboration with local governments or environmental organizations. TrashOut helps to document

these efforts and ensure the areas remain clean.

Challenges:

- **Data Accuracy:** Since the platform relies on crowdsourced data, the accuracy and completeness of reports may vary. In some regions, fewer users may result in underreporting, while in others, dumpsites may be miscategorized.
- **Reliance on User Engagement:** The success of the platform depends heavily on active user participation. Without regular updates and user contributions, dumpsites may go unnoticed, or cleaned areas may not be reflected on the map.

Litterati <https://www.litterati.org/>

Litterati is a global environmental initiative that empowers individuals to document and map litter using a mobile app. The project focuses on addressing littering by collecting data on the type, location, and brand of trash found in public spaces. By using crowdsourced data and AI-driven analytics, Litterati aims to tackle global waste and help municipalities, companies, and communities develop better waste management and cleanup strategies.

Key Features of the Litterati Project:

1. **Crowdsourced Litter Data Collection:** Litterati's core functionality allows users to take photos of litter and upload them to the platform, creating a database of litter around the world. Each photo captures the location, type, and brand of the litter, allowing for detailed analysis.
2. **Global Participation:** Litterati has users across the globe, making it one of the largest datasets on litter in existence. Participants range from individuals and community groups to schools, governments, and large corporations. The app has logged millions of pieces of litter from all corners of the world.
3. **Data Analytics for Litter Mapping:** The platform uses artificial intelligence (AI) to categorize the types of litter and track where they are most commonly found. The data helps identify patterns in littering behavior, such as:
 - Which locations are most affected,
 - The most common types of litter (e.g., plastic, paper, cigarette butts),
 - The brands associated with the litter (important for accountability).
4. **Challenges and Competitions:** Litterati engages communities by organizing challenges and competitions to clean up specific areas or reduce certain types of litter. Schools, cities, or organizations can set goals and track their progress over time. These challenges often involve friendly competitions to see who can collect and document the most litter.
5. **Geo-Tagging for Location Tracking:** Every piece of litter documented with Litterati is geo-tagged, meaning it is tied to a specific location. This allows users and municipalities to view litter hotspots on a map, providing valuable

insight for cleanup efforts and waste management planning.

6. Litter Insights for Cities and Governments: Litterati offers detailed insights and reports to local governments and municipalities based on the collected data. This data-driven approach helps authorities to:

- Identify litter-prone areas and focus cleanup efforts,
- Understand the impact of existing litter policies and regulations,
- Promote recycling and waste reduction strategies based on real-world data.

7. Brand Accountability: One unique aspect of Litterati is its ability to track the brands most commonly found in litter. This helps hold companies accountable for the environmental impact of their packaging. The data can also be used by businesses to improve their sustainability practices by reducing single-use packaging or adopting circular economy principles.

8. Educational and Community Engagement: Litterati is often used by schools, universities, and community groups as an educational tool to teach students about environmental responsibility and the importance of keeping public spaces clean. It encourages communities to take action and become more aware of waste management issues.

9. Environmental Policy Advocacy: The data generated by Litterati can be used by environmental organizations and activists to advocate for better waste management policies, including bans on single-use plastics or improvements in public recycling infrastructure.

Use Cases for Litterati:

1. For Governments and Municipalities: Local authorities can use Litterati data to:

- Identify litter hotspots and allocate resources for targeted cleanups.
- Measure the effectiveness of litter policies (such as public waste bin placement or recycling programs).
- Create public awareness campaigns using real-time data about local littering behaviors.

2. For Schools and Educational Institutions: Schools often integrate Litterati into environmental education programs. By encouraging students to participate in litter challenges, educators can teach important lessons about waste reduction, sustainability, and personal responsibility.

3. For Businesses and Brands: Companies can use Litterati to:

- Analyze how often their packaging is found as litter and where it is most commonly disposed of improperly.
- Take steps to redesign packaging to be more sustainable or to educate customers about proper disposal.
- Demonstrate corporate social responsibility by using the data to reduce their environmental footprint.

4. For Environmental NGOs: Non-governmental organizations (NGOs) can use Litterati's data for advocacy campaigns, pushing for stronger environmental protections and better waste management practices at the local and national

levels. The data can also be used to organize large-scale cleanups and track their impact.

5. For Individual Users: Anyone can participate by documenting litter in their neighborhood or community, contributing to the broader goal of reducing waste and keeping public spaces clean.

Success and Impact:

- **Millions of Pieces of Litter Documented:** Since its inception, Litterati has grown to include a vast number of users who have collectively documented millions of pieces of litter worldwide. This has made it one of the most comprehensive datasets for tracking and understanding littering behavior globally.
- **Policy Changes:** Litterati's data has contributed to policy changes in several cities, including influencing the placement of trash and recycling bins, and even supporting the passage of bans on single-use plastics in some regions.
- **Brand Accountability:** Some companies have used Litterati's insights to rethink their product packaging and invest in more sustainable materials.

Limitations:

- **User Participation:** The effectiveness of Litterati relies on active user participation. Areas with fewer users may have less data, and hotspots might be underreported in less-populated regions.
- **Data Validation:** Since the platform relies on crowdsourced data, there may be inconsistencies in how users tag litter or identify brands