

LIFE Awards 2021 – NATURE

Shades of blue and green

In Flanders, Belgium, open space in peri-urban areas is often converted into housing, commercial buildings, and infrastructure like roads, railways and airports. This open space loss amounts to around seven hectares per day, an area thirteen times bigger than a football field. It reduces biodiversity loss, increases the risk of floods and deprives people of recreational spaces. The **LIFE GREEN4GREY** team introduced green and blue infrastructure elements across this densely-populated region to enhance biodiversity and fight climate change. Work included transforming former mining sites and farmland into multipurpose landscapes. The team restored ponds and grew large forests, natural grasslands, bushes and orchards. They also helped prevent flooding by restoring natural water courses like streams. And they engaged with residents, local businesses and schools to raise awareness of climate issues. Also, their green and blue infrastructure guides are being used by other European regions.

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Saving an iconic bird from climate change impacts

Around 80% of the global population of the Eleonora's falcon breeds in Greece¹. A lack of suitable breeding sites makes this species extremely vulnerable, especially in the face of climate change. Other threats the birds endure are illegal hunting, tourism and predators like rats². **LIFE EIClima** improved the bird's habitat on several Greek islands, helping it adapt to climate change. To boost breeding, the team ran the largest-ever rat eradication operation in the Aegean. This saw 705 hectares on seven islets - an area four times as big as Monaco - becoming rat-free. They installed around 1 000 artificial nests at five sites and planted fruit trees, bushes and cereals for the birds to feed on. And they produced a good practice guide on the falcon's foraging sites in Greece and southeast Africa. This was sent to relevant authorities in Greece, the Mediterranean and Africa so that they too could help the falcon adapt to climate change.

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¹ Dimalexis, Anastasios & Xirouchakis, Stavros & Portolou, Danae & Latsoudis, Panagiotis & Karris, Georgios & Fric, Jacob & Georgiakakis, Panagiotis & Barboutis, Christos & Bourdakis, Stratis & Ivovic, Milica & Kominos, Theodoros & Kakalis, Eleftherios. (2007). The status of Eleonora's Falcon (*Falco eleonora*) in Greece. *Journal of Ornithology*. 149. 23-30. 10.1007/s10336-007-0207-4.

² Eleonora's Falcon *Falco eleonora* – Threatened species | DG Environment - European Commission. (2021). Retrieved 6 April 2021, from https://ec.europa.eu/environment/nature/conservation/wildbirds/threatened/f/falco_eleonora_en.htm

Have a safe flight

Each year, millions of birds across the world are killed when they collide with or are electrocuted by power lines³. In the Slovak Republic, the **LIFE ENERGY** team helped many birds avoid such collisions. They identified the riskiest areas, before installing 8 600 bird flight diverters along 77 km of the most dangerous power lines. These diverters protect 700 birds from collisions every year. The team also planted 550 trees to enhance existing wind breaks, helping the birds to see power lines better. These trees have boosted biodiversity in the area and encouraged nesting and breeding. Around 2 600 injured birds were cared for, with half of them returned to the wild.

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³ Power lines: Fatal for migratory birds. (2019). Retrieved 6 April 2021, from <https://www.euronatur.org/en/news/detail/news/power-lines-fatal-for-migratory-birds/>

Saving the largest raised bog in northwest Europe

Around 85% of the EU's peatland habitats are threatened⁴. Despite their high environmental, economic and social importance, as well as their potential to curb climate change, peatland degradation continues. To counter this decline, **LIFE Lille Vildmose** worked to restore the largest raised bog in northwest Europe – Denmark's Lille Vildmose. The team reintroduced the wet conditions vital for peat to form. Work included reviving Lake Birkesø - it now has a surface area of 130 hectares, an area three times bigger than Vatican City. They also raised the water level on 770 hectares of peatland and cut down 200 hectares of Birch trees. The Black stork, Wood sandpiper and White-tailed eagle are now thriving. The bog is today one of the country's largest and most popular nature sites. It has also become a blueprint for peatland restoration.

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⁴ LIFE Peat Restore - An EU peatland project funded by LIFE Climate Change Mitigation Available at: https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=P/EAT-RESTORE_Leaflet_EN.pdf

Long live the sea turtle

As the Mediterranean Sea is the world's most overfished sea⁵, it also has the highest sea turtle by-catch rate.⁶ **TARTALIFE** reduced the numbers of sea turtles being caught up in fishing nets along 15 Italian coastal areas. They encouraged 1 290 local fishermen to use circular hooks instead of traditional sharper ones. This reduced the number of sea turtles being caught by up to 40%. The team also used ultraviolet-LED lamps as a deterrent, collapsible fish pots to replace nets, and special turtle excluder devices, which stopped turtles from being accidentally captured. They launched a 'Turtle Safe' quality certification for fishing vessels. Nearly one million tourists were targeted through 6 000 events, boosting awareness of the challenges the sea turtle faces.

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⁵ Colloca, F., Scarcella, G., and Libralato, S. (2017). Recent trends and impacts of fisheries exploitation on Mediterranean stocks and ecosystems. *Front. Mar. Sci.* 4:244. doi: 10.3389/fmars.2017.00244

⁶ Pulcinella, J., Bonanomi, S., Colombelli, A., Fortuna, C., Moro, F., Lucchetti, A., & Sala, A. (2019). Bycatch of Loggerhead Turtle (*Caretta caretta*) in the Italian Adriatic Midwater Pair Trawl Fishery. *Frontiers In Marine Science*, 6. doi: 10.3389/fmars.2019.00365

LIFE Awards 2021 - ENVIRONMENT

Reducing mercury emissions from dental clinics

A lot of the amalgam (liquid mercury) used in dentistry ends up in the environment. As it is, 41% of all water bodies in the EU already exceed mercury concentration levels⁷. The team at **Hg-rid-LIFE** has found a way to reduce these poisonous mercury emissions coming from Swedish dental clinics. They decontaminated piping systems in 132 such clinics using improved decontamination methods. Overall, they managed to collect and dispose of 372 kg of mercury sludge, which is around the same weight as a cow, and 21 kg of mercury. To promote their new method, they developed an online training tool in Swedish, English, German, Spanish and French. And 13 lectures on their approach and online tool were organised for dental nursing students. Europe now has a better way to decontaminate mercury that could soon be rolled out across the continent.

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⁷ . EEA (2018). Mercury in Europe's environment – A priority for European and global action. European Environmental Agency Report No 11/2018. Available at: <https://www.eea.europa.eu/publications/mercury-in-europe-s-environment>

Bringing biodiversity back to riverbanks near dams

The banks of most water bodies containing dams are covered with wave breakers made of concrete. These dams have a negative impact on the environment, reducing biodiversity and harming habitats.⁸ The **LIFE INADAR** project team took an alternative approach when widening and elevating riverbanks near two hydropower stations in Germany. They replaced concrete slabs with ‘eco-berms’ which are made of materials like stones, sediment and dead wood. Like concrete, these eco-berms stop erosion and flooding, but they also improve biodiversity along riverbanks. Species such as the Dragonfly, Ring snake, Kingfisher and juvenile fish have made a welcome return. The approach is cost-effective as producing eco-berms is around one third cheaper than using concrete.

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⁸ Yale Environment 360/Paul Hockenos, 2018. “A Balkan Dam Boom Imperils Europe’s Wildest Rivers” <https://e360.yale.edu/features/a-balkan-dam-boom-imperils-europes-wildest-rivers>

Removing pharmaceutical compounds from wastewater

Pharmaceutical compounds are classified as contaminants of emerging concern (CECs)⁹. If not checked, these chemicals could pollute drinking water sources and wastewater reuse projects. **LIFE Impetus** tested new and ecological ways of removing such compounds from urban wastewater treatment plants in Lisbon and the Algarve. New waste treatment mixtures comprising biomass residues were compared with commercial products. Their approach was successful, easy to implement, low cost, and used less energy than traditional methods. In fact, an eco-friendly pine nutshell derivative outperformed its commercial counterpart in tests, and it should soon be on the market. The new technology can be used in most EU wastewater plants.

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⁹ OECD (2018). Contaminants of emerging concern.

<http://www.oecd.org/water/oecdworkshoponmanagingcontaminantsofemergingconcerninsurfacewaters.htm>

Green, local and traditional building

Traditional building materials such as concrete, firebrick and petrochemical insulation produce a lot of greenhouse gas emissions. The team behind **LIFE REUSING POSIDONIA** took a natural approach to construction. They used dried *Posidonia oceanica* seagrass as an effective and inexpensive thermal insulation in 14 social housing units for poor and disadvantaged people on the Balearic island of Formentera. This local, traditional and environmentally friendly construction method reduced emissions by 60%, cut energy use by 75%, and water by another 60%. The approach can be used in other coastal areas that are home to the seagrass. 41 local jobs were created to carry out the work.

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Less food waste for better life quality

In the EU, around 20% of the food produced is either lost or wasted¹⁰. And in London alone, people throw away around 900 000 tonnes of food each year¹¹ – that’s around 80 times heavier than The Eiffel Tower. The **LIFE TRiFOCAL London** team ran a communications campaign called Small Change, Big Difference. The goal was to encourage Londoners to change their usual shopping, storage and meal preparation habits. Their approach helps prevent food waste, promotes healthy eating, and encourages food waste recycling. Between 2017 and 2019, they helped to reduce the amount of avoidable household food waste by 9%. And there was a 14% rise in recycling such waste. The team set up an online ‘Resource Bank’ to help other cities like Barcelona, Dublin, Milan and Vienna follow the same approach.

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¹⁰ <http://www.eu-fusions.org/phocadownload/Publications/Estimates%20of%20European%20food%20waste%20levels.pdf>

¹¹ https://refood.co.uk/wp-content/uploads/2019/07/SARIA_NFWH_report.pdf

LIFE Awards 2021 – CLIMATE ACTION

Cutting home heating emissions in several EU countries

The residential heating sector is one of the main emitters of particulate matter and soot in the EU¹². **Clean Heat** set out to reduce such emissions coming from private wood burning in Denmark, Germany, and other EU countries. The team measured emissions from firewood stoves and the results were very useful for identifying cleaner alternatives. Their media campaign reached more than 60 million EU citizens. And various events and workshops featuring key lawmakers in Germany and Denmark were a hit, adding to the political debate on air quality. Partner NGOs in Czechia, Denmark, Germany, Hungary, Slovenia and Slovakia submitted action plans to their respective governments.

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¹² : EEA, 2020, Air quality in Europe — 2020 report, EEA Report No 09/2020, European Environment Agency (<https://www.eea.europa.eu/publications/air-quality-in-europe-2020-report>)

Helping islanders adapt to climate change

Extreme weather events like droughts and storms are having a devastating impact on European agriculture. For many farmers, the damage and losses can threaten their very existence. **LIFE ADAPT2CLIMA** showed how vulnerable agriculture in Crete, Sicily, and Cyprus is to climate change and suggested ways to adapt. The team came up with a set of climate, water and crop simulations to assess the sector's future climate change challenges. These were integrated into the ADAPT2CLIMA tool that helps the islanders make the right climate adaptation decisions. The work culminated in tailor-made agricultural adaptation strategies for the three islands.

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New tools to help foresters cope with climate change

Climate change can negatively impact the growth and productivity of forests. But protecting the lungs of the earth can reduce extreme weather events like forest fires and droughts while cutting emissions. To this end, **LIFE FORECCASt** helped forest managers in France's Haut-Languedoc Regional Nature Park put in place climate change adaptation strategies. They built a mobile application to help foresters assess and manage the risks to their land. 25 sites tested climate-resilient tree species and forest management practices that use less water. The team also held awareness-raising events and they involved locals in developing an action plan in the event of a severe climate crisis. Organisations in Belgium, Italy and Slovenia have shown an interest in using the app.

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Changing flooding mindsets in the Italian Alps

In Europe, floods are on the rise due to climate change. These extreme weather events often result in human tragedy and economic losses. The environment also suffers from wildlife habitats being destroyed and water bodies polluted. The **LIFE FRANCA** team helped make an important shift from flood response to flood prevention in the Italian Alps. They analysed flood risk data in the Trento province and developed an online flood risk portal, which is being managed by experts at the area's torrent control service and has proven popular with the public. Promotional activities reached nearly 80 000 citizens and around 9 000 students. More than 500 journalists and teachers were trained on how best to communicate the flood risk to the public. The approach can be used by other EU regions.

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Food waste for goats

Europe's farms generate some 700 million tonnes of waste annually¹³ and a lot of it goes into landfill, which can pollute the environment. To counter this, **LIFE LowCarbon Feed** produced two new goat feeds from food waste. The first was derived from rice straw, while the second came from citrus waste. Both were tested on farms in Spain and Italy. The team converted around 90 tonnes of this waste into feed, which is around 15 times the weight of an elephant. Both feeds reduce emissions from the goats by between 8 and 22%. The outreach campaign reached 11 million people across Europe. The citrus feed should be on the market this year.

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¹³ Pawełczyk, Adam. (2005). EU POLICY AND LEGISLATION ON RECYCLING OF ORGANIC WASTES TO AGRICULTURE

(https://www.researchgate.net/publication/290391396_EU_POLICY_AND_LEGISLATION_ON_RECYCLING_OF_ORGANIC_WASTES_TO_AGRICULTURE)