



Too Good To Go

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How otters found dead serve conservation legislation

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Background: As top predators, otters are health indicators for their aquatic ecosystems. While living otters can be difficult to monitor, specimens found dead can serve as a valuable resource to monitor population and ecosystem health via passive surveillance¹.

Post-mortem investigations: Conducted by specialists or non-experts receiving guidance, can be run at high standards or basic level without expensive equipment, in accordance with applicable conservation law².

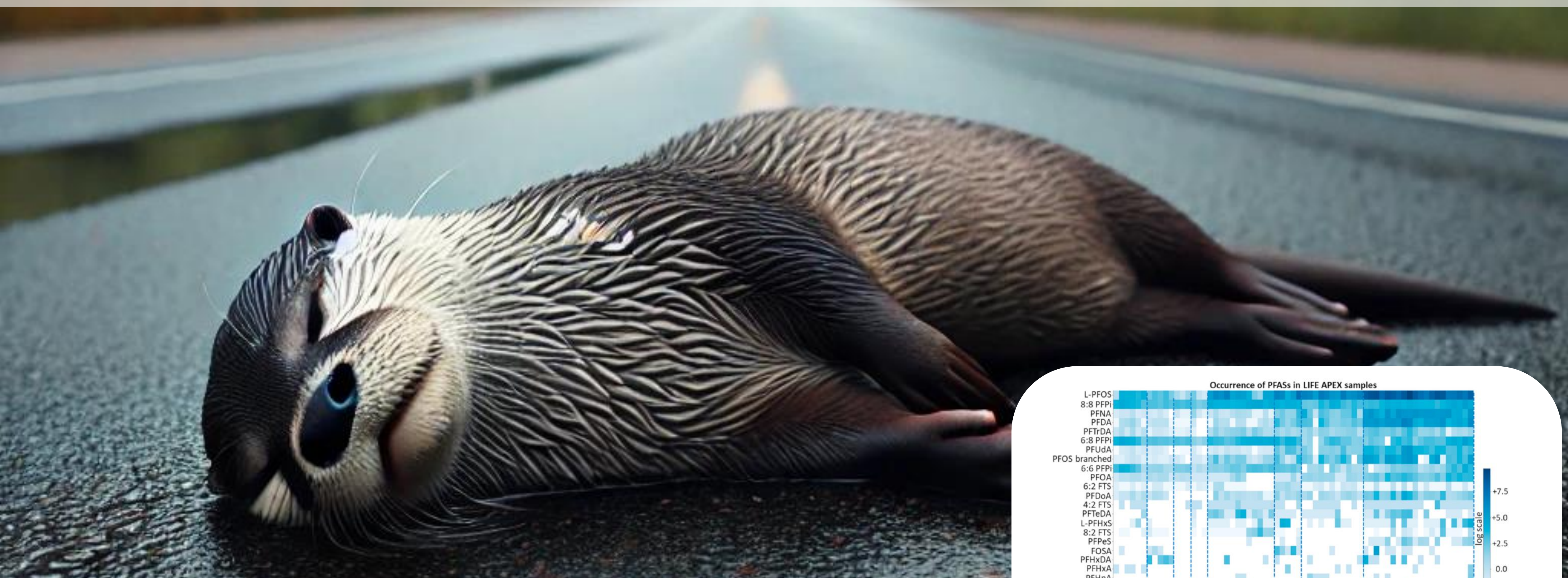
Biobanking & data storage: To assess temporal population trends, long-term and spatially widespread collection of samples and data is ideal. Archives allow for retrospective investigations or application of novel methods.

Direct health indicators:

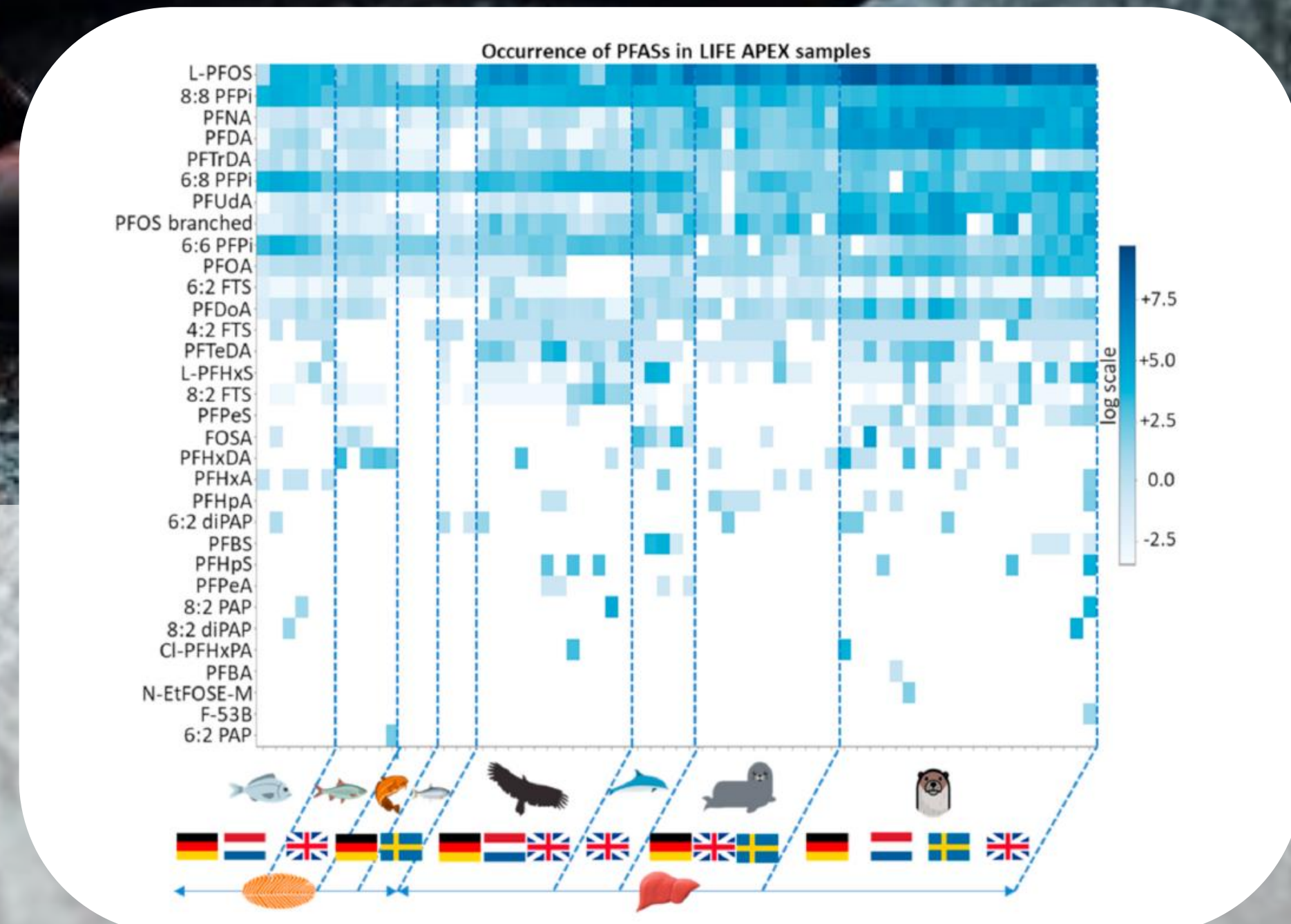
- Otters can become infected with and transmit **infectious (zoonotic) diseases**³.
- Otters are exposed to numerous bioaccumulative, persistent and toxic **chemical pollutants**⁴.
- Population genomics give insight into **genetic health**, such as gene flow or bottlenecks⁵.

Indirect health indicators:

- Surveys on **species distribution** are indicators of population dynamics and habitat choice⁶.
- Locations of roadkill casualties reflect **habitat use** and guide the installation of wildlife passages⁷.
- **Dietary analyses** reveal regional, seasonal and age dependent prey occurrence or shortages⁸.



Legislation: Overarching international guidelines require periodic reporting on the status of protected habitats and species. Post-mortem data can be used effectively to inform the regulation of chemicals, as seen with per- and polyfluoroalkyl substances in top predators in Europe⁹.



Otter post-mortem data can feed into regulations in a One Health context.

References:

1. Rohner, S, et al., *Animals* 12.1 (2021): 59. // 2. Simpson, *Veterinary record* 141.8 (1997): 191-197. // 3. European Food Safety Authority, European Centre for Disease Prevention and Control, European Union Reference Laboratory for Avian Influenza, et al. *EFSa Journal* 22.10 (2024): e9057 // 4. O'Rourke, E, et al., *Environmental Science & Technology* 56.3 (2022): 1675-1687. // 5. du Plessis, S, et al., *Molecular Biology and Evolution* 40.11 (2023): msad207. // 6. Lanszki, J, et al., *Mammalian biology* 73.1 (2008): 40-47. // 7. Chanin, *Hystrix* 17.1 (2006). // 8. Boyi, J O, et al., *Molecular ecology* 31.19 (2022): 5089-5106. // 9. Androulakakis, A, et al., *Chemosphere* 287 (2022): 131775.

Graphic content:

Background image: ChatGPT, personal communication, 09.02.2025 // Icons by flaticon.com: freepik, surang, smashicons // Photo Simon Rohner: Nina Maurer // Figure: Heatmap representing the occurrence of PFAS in the LIFE APEX samples. The concentration levels are given in ng g⁻¹ wet weight in logarithmic scale. The analytes are sorted based on their frequency of appearance (FoA) in the samples. Clear white colour represents values < MDL for the respective analyte. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)⁹



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