

War on Polyethylene Terephthalate. Liechtenstein Post's Anti-plastic Campaign

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Landlocked Liechtenstein, a Central European nation located in the Alps, is renowned as a winter sport destination. Thus, conservation biologists looked on with interest when, on 7 September 2020, the Principality issued an unusual stamp, as part of the philatelic issues by Liechtensteinische Post AG, the official postal authority of the country (Fig. 1). The stamp draws attention to the dangers posed by plastic pollution on marine life, as highlighted on the cover (Fig. 2), and a marine turtle consuming a piece of plastic is depicted in the maximum card (Fig. 3).

Plastic pollution in natural environments has been widely documented, and by one estimate, of the 275 million metric tonnes of waste generated in 2010, 4.8 to 12.7 million metric tonnes were released into the world's oceans (Jambeck *et al.* 2015). The accumulation of plastic material, often symbolised by the Polyethylene Terephthalate (PET) bottle, is known to have affected ecosystems and species for decades. Harm brought to marine turtles has been suggested to include mortality following ingestion (Nelms *et al.* 2015), with pelagic stages of species more prone to consuming plastic (Clukey *et al.* 2017).

The goal of the new issue from Liechtenstein is to draw attention to environmental protection and the recovery of recyclable materials. The stamp was embroidered by the firm, Hämmerle & Vogel in Lustenau, Austria from polyester yarn thread derived from 3,100 recycled Polyethylene Terephthalate (PET) bottles of 600 ml volume. The three million meters of recycled polyester thread used

is sufficient to encircle the border of Liechtenstein forty times. Hämmerle & Vogel is familiar to many for its other innovative stamps, such as the cotton-embroidered issues from Austria, including "Petit Point" (Eidelweiss flowers) issued 17 September 2010 (Stanley Gibbons catalog number, SG 3054), "Dirndl" (showing traditional Austrian ladies wear) issued 22 September 2016 (SG 3417), and the merino sheep wool thread used in the manufacture of the "Styrian Hat," issued 22 September 2018 (SG 3533). The firm also produced two souvenir sheets for Liechtenstein, issued to commemorate 300 Years of the Principality, on 12 January 2019. Shaped like crowns, they are cloth-embroidered, the special edition with a 24 carat gold thread, in addition to showing eight embedded Swarovski crystals. The 2,019 units (representing the year of issue) issued were distributed via a lottery (the catalog number SG 1864 was attributed to the regular version).

The current issue of interest is a near-circular, self-adhesive, blue (water) and green (land) stamp, of face value €6.30, and shows an embroidered globe in the center and three green leaves to the left, thus incorporating a natural motif. Not only can it be used as a postage stamp, the same can be attached to clothes and other accessories as an appliqué. The embroidered letterings (also from recycled plastic) indicate "Fürstentum Liechtenstein," or 'Principality of Liechtenstein,' on the outer edge of the globe, with the face value indicated within. The unusual stamp was produced using an automated process (Fig. 4).



Figure 1. A mint, plastic thread embroidered stamp from the 'PET Recycling' issue from 7 September 2020 (SG 1917).



Figure 2. A stamp on a first day cover, showing a Vaduz, Liechtenstein, cancellation.

The value of postage stamps in public education is recognized widely, topics as diverse as the social sciences (Kirman & Jackson 2000), medicine (Andrews 1956), politics (Raento 2006), and other fields. Yeung (2018) argued the cost-efficiency of postage stamps for conservation education, nature-themed stamps having the potential as a powerful tool for advocacy.

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Figure 3. A stamp on a maximum card, showing one possible effect of plastic in marine environments.



Figure 4. Production of the PET-bottle-based embroidered stamp required over a million revolutions to produce the output of 40,000 sheetlets. On the other hand, a single embroiderer, using manual tools, would take an estimated 25 years to produce these.