**Supplementary File 1: Additional Details Regarding Study Methods (Data Collection and Data Analysis)**

**DATA COLLECTION:**

**Data collection period:** Our web scraper created an automated search for Facebook posts containing each keyword via the search bar of the Facebook homepage from March to April 2019. Using this approach, we were able to collect retrospective data on posts based on what was available via the history of posts on a user’s account. We note that our dataset also included posts that were collected but were subsequently deleted by users at the time of manual review.

**Search parameters and settings:** Search parameters included posts source, post type, tagged location, and date posted. The configuration of the searches was set to “public”, “all posts”, “anywhere” and “any date”. The auto-scraper collected the post text, username, timestamp and permanent link (e.g. hyperlink to original post URL on the Facebook platform if still available) from each returned result.

**Keyword selection:** Because online wildlife marketing and sale often involves the use of codewords (i.e. created with intent of concealing content or detection) and non-code words (i.e. vernacular or slang that are developed by a particular community), we first compiled a list of species-related names, codewords, and non-code words for the three species in order simulate a user/buyer search in Chinese ). Due to concerns about consumers using these keywords, they are not disclosed, though are available upon request.

**DATA CODING AND ANALYSIS:**

**Facebook Selling Posts Data Coding Details:**

*Signal Posts:*All signal posts included a material description noting that the product was made with a wildlife part or the product image clearly showed a live animal if it was not a wildlife-derived product. We used a binary coding scheme of “yes” or “no” based on whether a post contained the wildlife selling text or had an associated image with one or more wildlife products (including other wildlife outside of our study keywords). Additional wildlife keywords detected in posts were also recorded. We also categorized specific wildlife species from detected posts by compiling all species detected and following a binary classification coding scheme for each detected species. When possible, we examined both the text and accompanying image of the post to assess the authenticity of the wildlife product. For example, in the case of ivory products, we inspected product images for clear Schreger lines that we could identify and for other products we attempted to assess whether they contained images which were clearly not wildlife products (i.e., were made from plastic or were replica products).

*Geotagged Data:* We took further steps of assessing the veracity of geographic information collected from a Facebook user’s profile, considering users may intentionally misreported their geolocation information to be more covert. After we collected self-reported geolocation metadata from users, we went to the users’ public personal profile and cross-referenced other metadata such as their self-reported education and working experience and also examined the geolocation of confirmed Facebook friends. If there were 5 or more friends reporting the same location with the user’s location, or if any of the users’ education and working history was located in the same location as self-reported, we considered location data as more likely than not to be valid. Otherwise we marked the geolocation information as “unknown”. We categorized all detected posts with geolocation into two different types of accounts: personal accounts and community accounts (since posts on public group pages are posted by personal users we also categorized them as personal accounts for this analysis).

**Facebook Page Type Description and Coding Scheme:** We coded for the three classification of Facebook pages that included signal posts including: (a) personal user accounts; (b) public group pages; and (c) community pages.

*Description:* Personal account pages are used by individual Facebook users. This account type is used for private posts and to share information among friends or possibly the public (based on the users’ privacy preference setting). The size of the population exposed to private messages is based on the number of users’ friends for their profile. The second type is a public group page. A public group is created by a group manager for a special theme/topic. Users who have the same interests can join or be invited into these groups and share information with other members. The size of users exposed to messages is related to the number of members in the group. The last type is a Community account page, usually used by a company or an organization for business purposes. This type of account is managed by one or more manager(s) and can be followed by other users. When account managers post updates on their community page, all followers can receive updates. Most community account pages are public and available to Facebook users who are not followers of the page.