Balloon Litter Monitoring on Virginia’s Remote Beaches: Surprising Results and Next Steps

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ABSTRACT
11,441 pieces of balloon-related litter were recorded from 2013-2017 by researchers O’Hara and Trapani on five of Virginia’s remote beaches. Survey protocols were developed to collect detailed information on each piece of balloon-related debris including type, condition, color, shape, size, occurrence and promotional markings, counts of plastic ribbons and other attachments, beach location and other unique findings. GPS coordinates and images were taken prior to removal. Analysis shows 54% of balloons were latex (i.e., foil, weather balloons), followed by plastic ribbons (44%) and other attachments (2%). Latex balloons were the most common of all balloon types (56%) followed by foil balloons (43%) and weather balloons (1%). Most latex balloons were in the burst condition (66%) whereas foil balloons were mostly deflated (65%). More than 900 balloons were imprinted with messages indicative of special occasions and company logos. Results of this study will be used in part to gauge the success of an ongoing Community-Based Social Marketing Project in Virginia targeting specific sources of balloon releases as well as the need for additional education and mitigation efforts.

PROJECT GOALS
- Document the types, accumulation rates and fate of balloon debris in the marine environment.
- Use this information to:
  - Better understand possible sources of balloon debris beyond mass releases;
  - Better understand other balloon practices that contribute to the balloon debris problem such as the use of plastic ribbons and the release of foil balloons;
  - Educate and inform the public;
  - Measure the impacts of Virginia’s Community-Based Social Marketing campaign, “Joyful Send-Off.”

METHODS
- Survey each site at least twice a year covering at least one mile.
- For every balloon debris item encountered, record the following:
  - Descriptive data including type (foil, latex, weather or ribbon only).
  - Condition (deflated, burst, piece, rib).
  - Location on beach (high, mid, low).
  - Other details including color, shape, attachments, events, logos, characters.
  - Record location data using handheld GPS.
  - Photograph each item in situ and full image.
  - When possible, record the amount of all other marine debris items encountered during a survey.

FINDINGS
- **Balloons, Ribbons & More**
  - Balloon-related litter included 6,145 latex, foil, and weather balloons (56%), 6,069 plastic ribbons (44%), and 237 other balloon attachments (2%). One sky lantern was recorded.

- **Latex Balloons Top the List**
  - 56% of all balloons were latex while 43% of all balloons were foil. Weather balloons and their parts (boxes, string, parachutes) accounted for the remaining 1%.

- **An Abundance of Plastic Ribbons**
  - 66% of all balloons (68% of all latex balloons) had at least one plastic ribbon attached.
  - Plastic ribbons pose threat of wildlife entanglement and ingestion.

- **Most Latex Balloons Are Burst**
  - 46% of all latex balloons were burst and 14% were deflated.
  - 61% of all foil balloons were deflated while only 9% were burst.
  - Burst latex and deflated foil balloons resemble prey of sea turtles and other marine animals.

Next Steps

Our findings reveal a substantial amount of balloon-related debris on Virginia’s remote beaches that are protected for wildlife. Continued and expanded public education is needed both on the part of the balloon industry as well as other groups working to address this issue. We hope that by continuing this research we will provide useful information for these groups, and a means to monitor the success of future efforts to prevent the release of balloons. We intend to develop a manual so that our methodology for conducting similar balloon-related debris monitoring can be used in other areas of the world.

The findings from our study also have important implications from a management perspective. While balloons and plastic ribbons are documented to present ingestion and entanglement threats to animals – especially sea turtles and seabirds – it is legal in most places to release balloons into the environment. Legislation to restrict mass balloon releases has been enacted in a few US states, including Virginia, and other locations. While state and local initiatives are important, balloons can travel regardless of legislative boundaries. Therefore, serious consideration should be given to regional and even national legislation to address the problems caused by balloon litter.

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850 Balloon Greetings
Balloons with Birthday, Mother’s Day and Valentine’s Day topped the list. It is unknown if these balloons associated with mass balloon releases. Under current VA law, release of up to 48 balloons in a 24-hour period is legal.

56 Names and Logos
On 75 occasions we found balloons imprinted with names/logos, including multiple records from Chick-Fil-A, McDonald’s and a dental office in Virginia.

11,441 Balloon Debris Items
46 balloon debris surveys at 5 sites in 5 years.
Survey distances ranged up to 7.3 miles.
111 linear miles of remote Virginia beaches surveyed.

Tis the Season for Education
86% of all “Graduation” and “Congratulations” balloons were found June-September indicating a need to work with school communities to prevent balloon releases. Seasonality of these and other types of balloons point to the need for targeted awareness campaigns.