WILDLIFE STRIKE: relevance and solutions of a safety problem

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III CONGRESSO NAZIONALE FAUNA PROBLEMATICA

Date:	**15 January 2009**
Local time:	**15:24**
Airport:	**La Guardia - NYC**
Aircraft:	**Airbus A 320-214**
Passengers:	**150 + 5 Crew**
Destination:	**Charlotte - NC**

STRIKE WITH A FLOCK OF CANADA GEESE

Yellow-legged gull

Weight: 1,1 Kg
Wingspan: 1,35 m

Boeing 747

Weight: 377.000 Kg
Wingspan: 65 m

$$E=\frac{1}{2}mv^2$$

Overall Picture

Since 1903 birds represent a serious risk for air navigation

Civil Aviation

- 53.630 estimated strikes/year (USA)
- 55 catastrophic events (1912-2012)
- 108 civil aircrafts lost (1912-2012)
- 255 fatalities (since 1988)

➡ **Costs: 1,2 billion $/year**

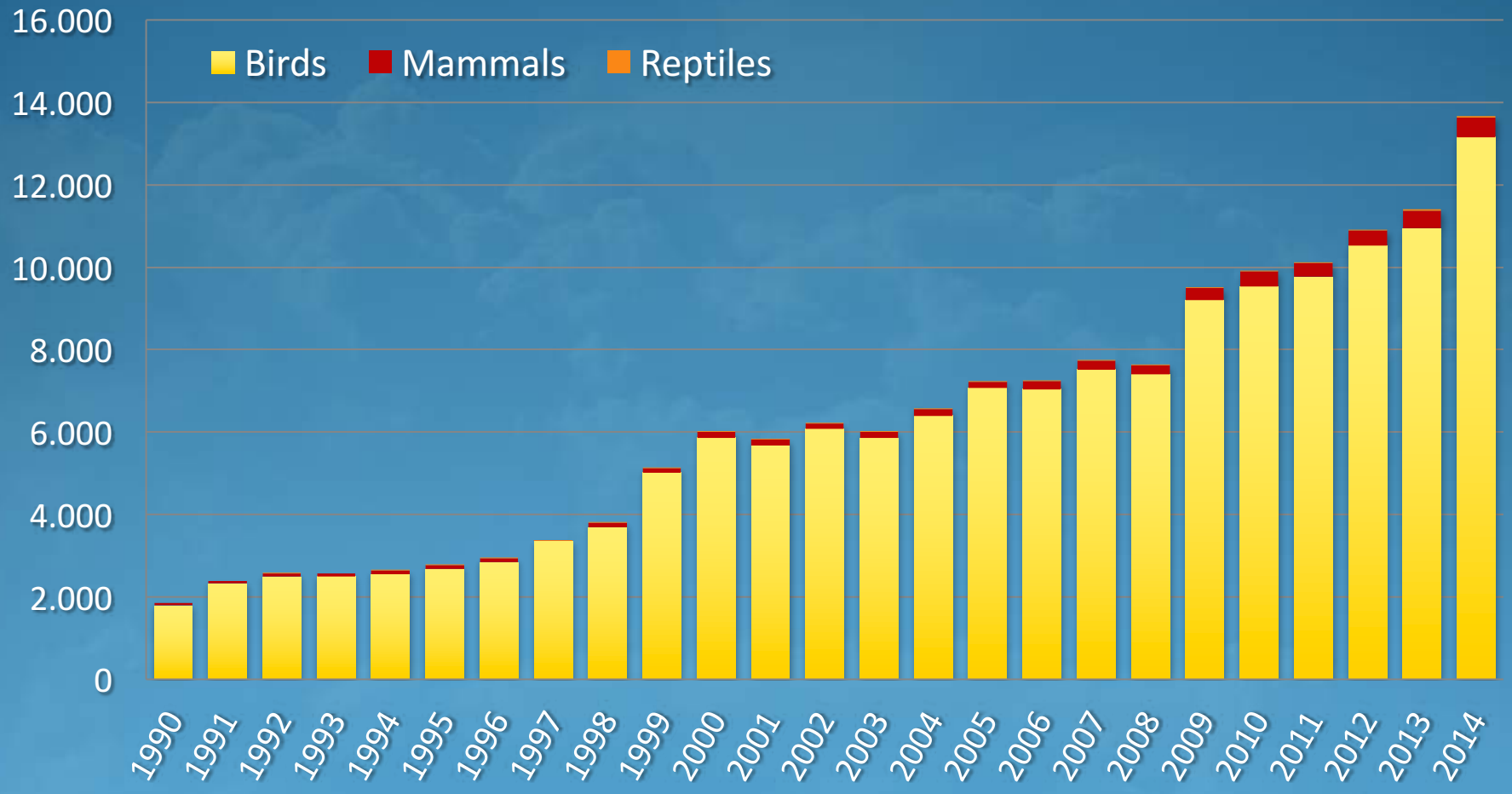
Air Force

- 4.300 strikes/year (USAF only)
- > 70 catastrophic events (1950-2002)
- > 380 lost aircrfts (1950-2002)
- 165 fatalities (1950-2003)

➡ **Costs: 25 million $/year** (USAF)

Data source: DeFusco et al. 2005; Thorpe 2012; Dolbeer et al. 2013; MacKinnon 2004; Richardson & West 2003.

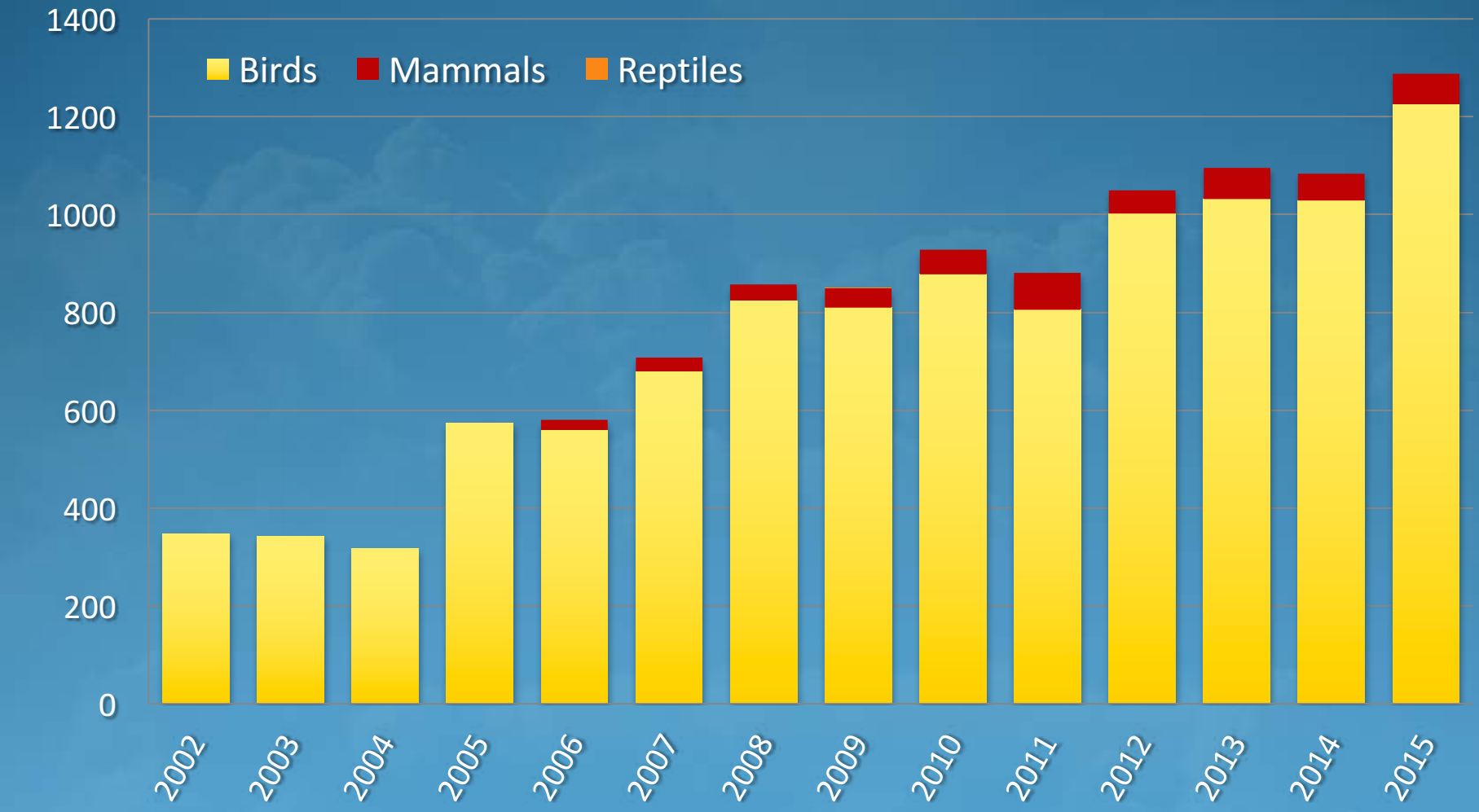
Wildlife strikes to civil aviation
USA, 1990-2014



Dati FAA

Wildlife Strikes to civil aviation

Italy, 2002-2015

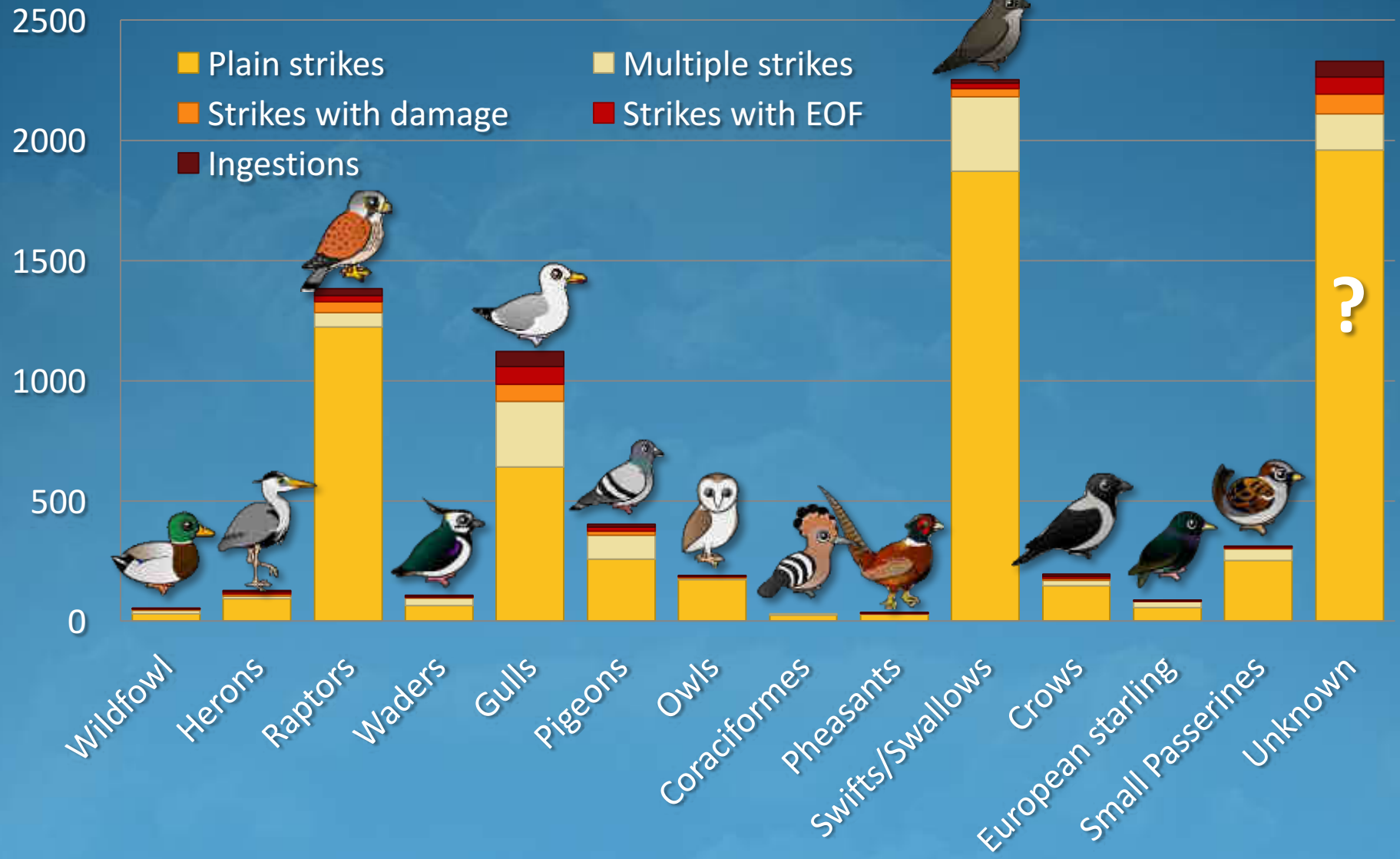


ENAC data

Why do wildlife strike increase?

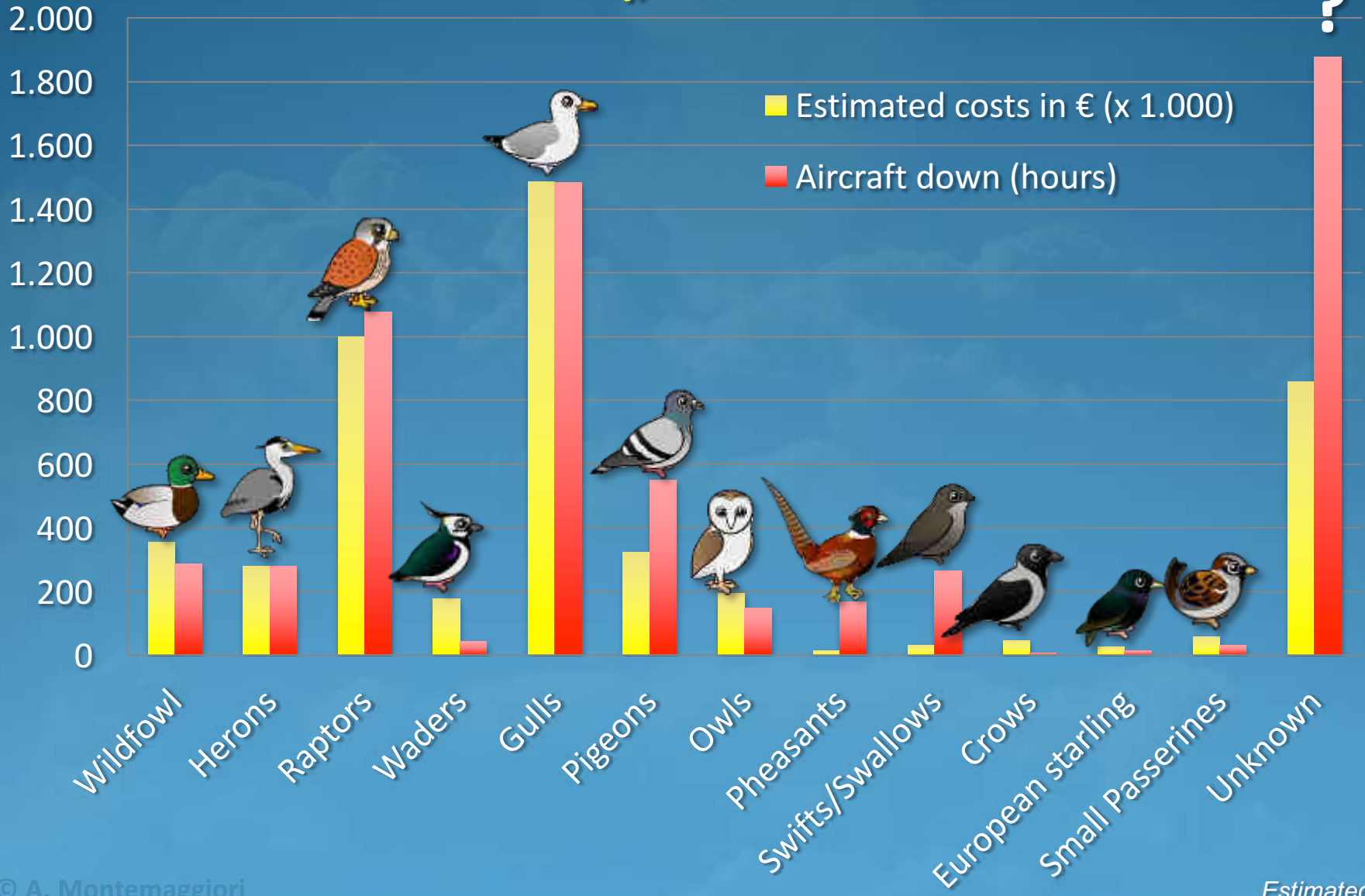
- Increase of commercial air traffic (+5%/year);
- Increase of awareness;
- Mandatory reporting;
- Increase of twin-engine aircrafts, vulnerable and silent;
- Population explosion of some wildlife species;
- Land use in the surroundings of airports.

Wildlife strikes to civil aircrafts by bird group
Italy, 2006-2015



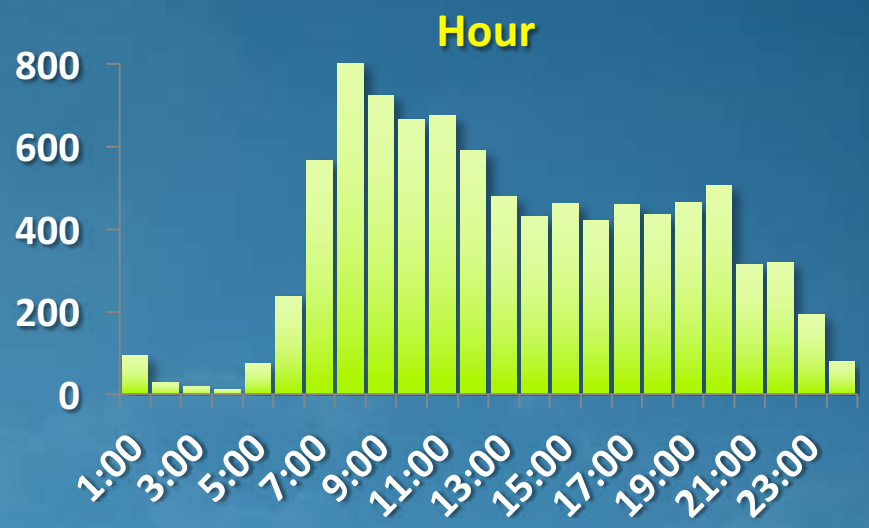
ENAC data

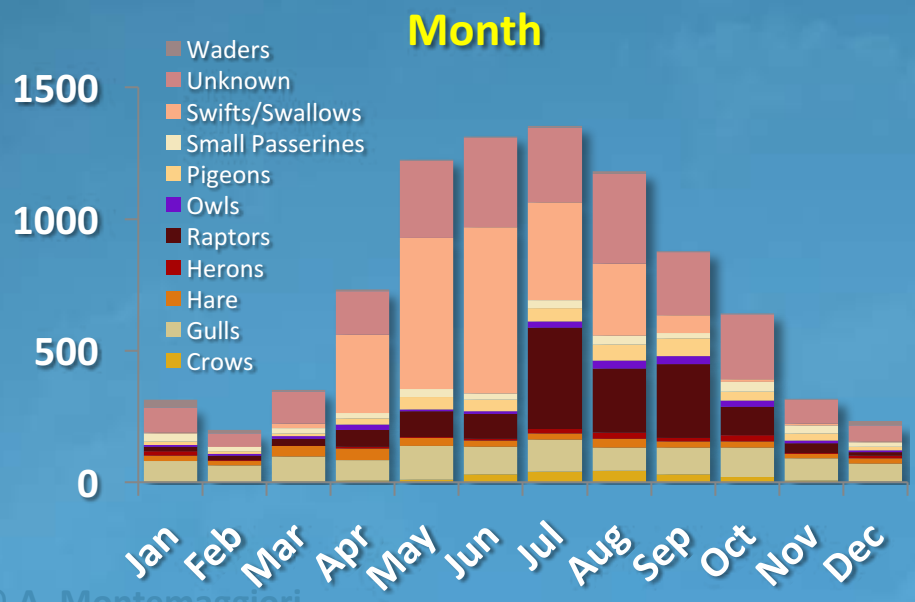
Estimated economic losses by bird group
Italy, 2006-2015



Estimated data

How, where and when wildlife strikes occur in Italy





ENAC data

Who takes care of the problem

- Airport Authorities
- Biologists
- Safety staff
- Meteorologists
- Pilots
- Engineers
- Technicians
- Lawyers
- Etc.

Organized in

International Organizations

e.g.:

WBA

(World Birdstrike Association)

National Organizations

e.g..:

BSCI

(Bird Strike Committee Italy)

International and national regulation

- **ICAO Annex 14** Aerodromes, Vol. I *Aerodrome design and operations*, Chapter 9. *Emergency and other services;*
- **ICAO Airport Service Manual** (DOC 9137- AN/898) - part 3; Bird Control and Reduction;
- **ICAO Airport Planning Manual** (DOC 9184 – AN/902) - part 1: Master planning & part 2; Land use and environmental control.

- **EASA: Regulation (EC) N° 1108/2009** del 21.11.2009
- **EASA: Regulation (EC) N° 139/2014**

- **Regolamento ENAC per la Costruzione e l'Eesercizio degli Aeroporti - Cap. 4 e 5**
- **Circolare ENAC APT-01 B/2011**
- **Informative Tecniche sulle Fonti Attrattive e Discariche**

- **Circolare APT-01**
- **R.C.E.A.**

December 2011

- **Wildlife strike reporting;**
- **Airport ecological assessment;**
- **Airport wildlife/habitat management plan;**
- **Annual reporting *(incl. risk assessment)*;**
- **Identification of the surrounding attractions;**

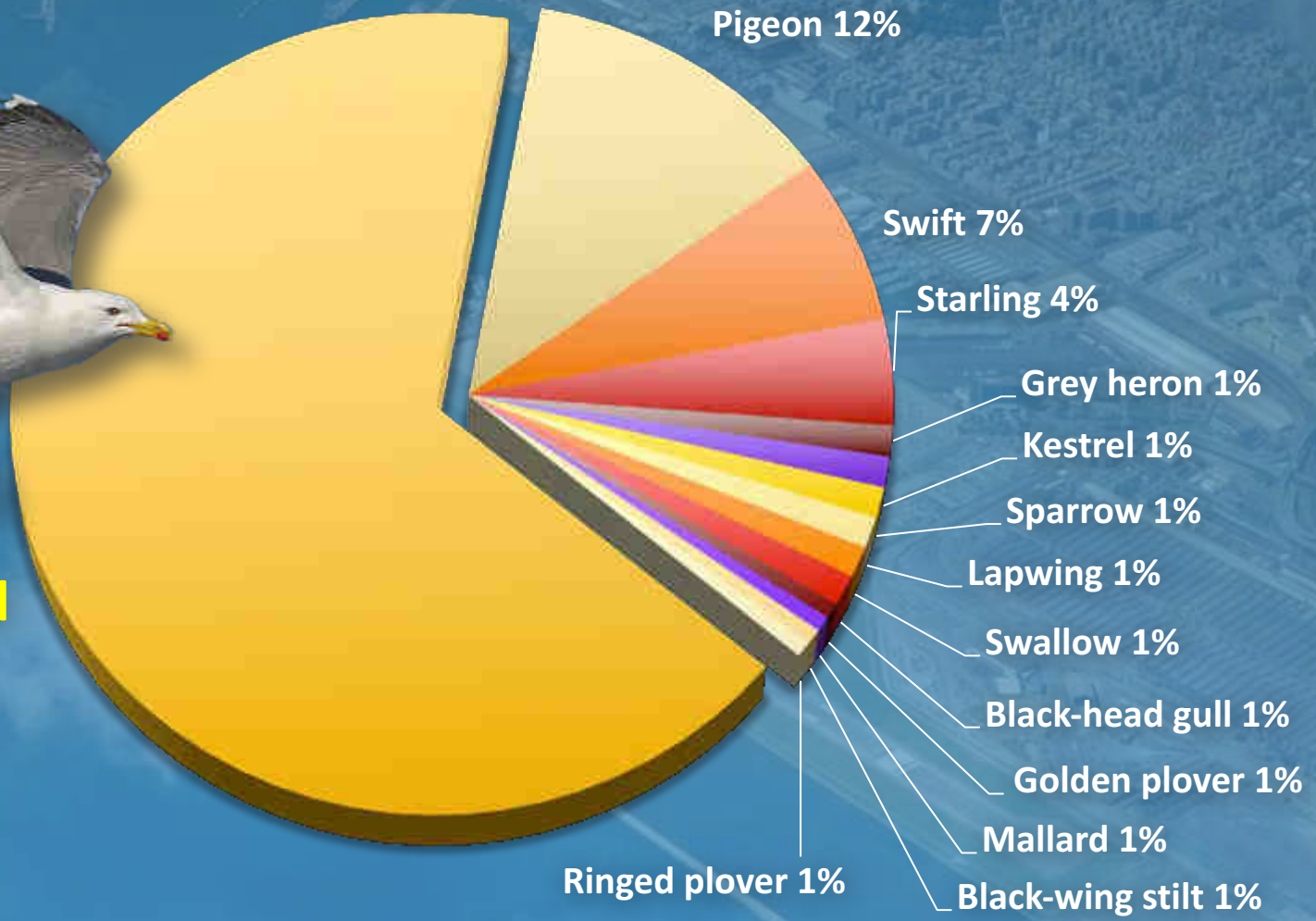
N. birdstrike/10.000 movements/year

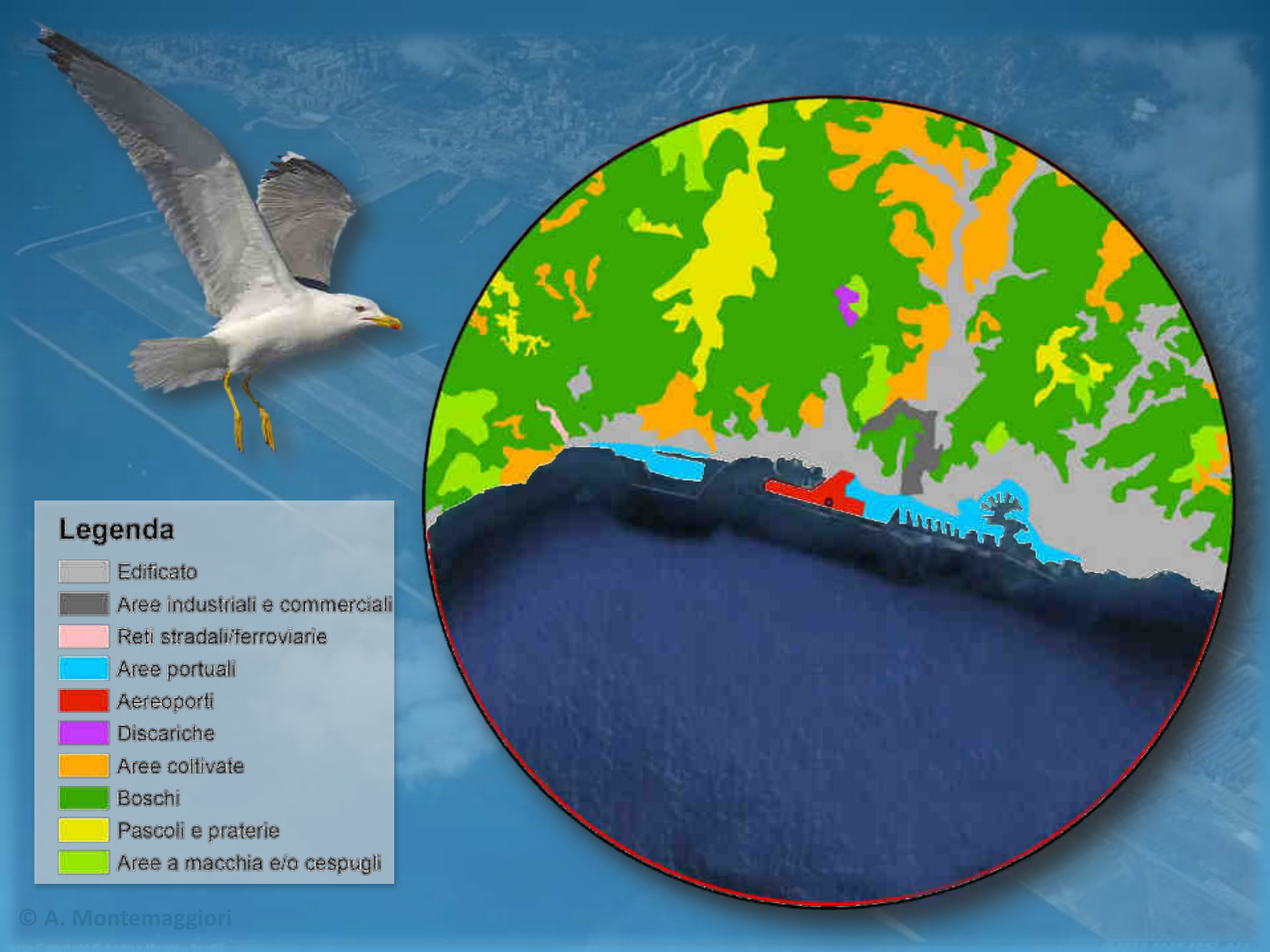
Genoa Airport

Struk species

Genoa airport, 2004-2014 - N = 162

Yellow-legged gull 67%





By 10.31.2014 the landfill close