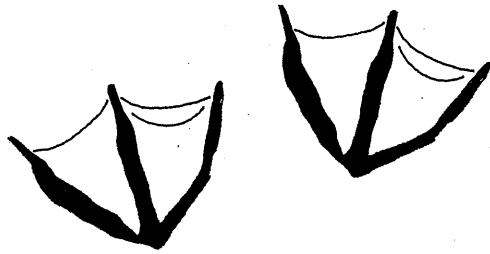


letizia.campioni@hotmail.com
LETIZIA CAMPIONI
Samples shearwaters



International Gull Meeting

San Sebastián 2019

Organized by:



SOCIEDAD DE CIENCIAS
SCIENCE SOCIETY
SOCIÉTÉ DE SCIENCES

INTERNATIONAL GULL MEETING, 2019

Editor: Juan Arizaga.

D. L.: SS 01252-2019

Edited by: Sociedad de Ciencias Aranzadi / Aranzadi Zientzia Elkarte.

Zorroagaina 11, 20014 Donostia, Spain

Tel. +34 943466142

www.aranzadi.eus

idazkaritza@aranzadi.eus

Organising Committee:

- Juan Arizaga
- Maite Laso
- Sergio Delgado
- Nere Zorrozua
- Asier Aldalur

Citation of this work: Arizaga, J. (Ed.). 2019. International Gull Meeting, 2019. Sociedad de Ciencias Aranzadi, San Sebastián.

PROGRAM

14 November.

- ⇒ 09:00. Welcome. P. Rock (IGM), J. Arizaga (Aranzadi), local representatives.
- ⇒ 09:15: Opening conference: Ecology and management of the Yellow-legged gull in the Western Mediterranean. By: Giacomo Tavecchia (IMEDEA-CSIC).
- ⇒ 10:00: Talks.
 - 10:00. The yellow-legged gull in Gipuzkoa: a review of 15 years of research. J. Arizaga.
 - 10:30. The role of anthropogenic food sources in gulls – investigating landfill effects on chick production and chick body condition. A. L. K. Nilsson.
- ⇒ 11:00: Coffee break.
- ⇒ 11:30: Talks.
 - 11:30. The largest roof-top colony of large white-headed gulls in Eastern Europe (Gatovo colony, Belarus). I. Samusenko.
 - 11:52. Recruitment rates of yellow-legged gulls in the southeastern part of the Bay of Biscay. S. Delgado.
 - 12:14. Managing gull populations around airports, a safety issue. A. Cama.
 - 12:36. Audouin's gull colony mercury temporal trends in a mercury-impacted ecosystem. M. Sánchez-Fortún.
- ⇒ 13:00. Lunch.
- ⇒ 15:00. Talks.
 - 15:00. Spatial and trophic ecology of yellow-legged gulls: its usage as sentinels of environmental and public health (insights into the SENTIGULLS project). R. Ramos.
 - 15:24. Time and energy costs of different foraging choices in an avian generalist species. A. Sotillo.
 - 15:48. Trophic ecology of the yellow-legged gull population breeding on the Basque coast. N. Zorrozueta.
 - 16:12. Ecology of an opportunistic predator living in an urban ecosystem: the yellow-legged gull in Barcelona. R. Aymí.
 - 16:36. "Sea" gulls or "Land" gulls? The study case of the yellow-legged gull in the oceanic island of Madeira. J. Romero.
- ⇒ 17:00. Coffee break.
- ⇒ 17:30. Talks.

17:30. Habitat use and spatial ecology of a yellow-legged gull population as revealed by GPS-tracked birds. N. Zorrozua.

17:54. Using automatic cameras for ring reading in gull colonies and landfill sites. M. Helberg.

18:18. Methodological issues... 1) Durability, wear and readability of read-rings; 2) Live-cameras as a gull study method. R. Juvaste.

18:42. The Algarve – a yellow-legged gull melting pot. C. Bagott.

19:06. Status of the black-headed gull in Norway. S. Molværsmyr.

⇒ 19:30. Dinner.

15 November.

⇒ 09:00. Gullwatching in San Sebastián.

⇒ 13:00. Lunch.

⇒ 15:00. Talks.

15:00. Spatial dynamics of the circulation of infectious disease agents in coastal areas: gulls as sentinels. T. Boulinier.

15:30. The use of seabird to monitor marine contamination in the MSFD context in France: results of the pilot study. G. Poiriez.

16:00. Causes of seagull admissions into a rehabilitation center in Portugal. R. Costa.

16:30. Gulls and zoonoses.

⇒ 17:00. Coffee break.

⇒ 17:30. Talks.

17:30. Suspended primary moult in adult Dutch herring gulls. M. van Kleinwee.

18:30. Foraging while migrating in non-breeding seabird populations: insights from multidisciplinary approaches. M. Louzao.

19:00. Movements of suburban yellow-legged gulls in NW Galicia. C. D. Romay.

⇒ 19:30. Dinner.

16 November.

⇒ 09:00. Full-day excursion: gullwatching along the Basque coast.

⇒ 20:30. Closure dinner.

OPENING CONFERENCE:

Ecology and management of the Yellow-legged gull in the Western Mediterranean.

Giacomo Tavecchia¹

¹Animal Demography and Ecology Unit (GEDA), IMEDEA – CSIC/UIB, Spain. Contact: g.tavecchia@uib.es

With a minimum population around 65,000 pairs growing at an annual rate of 5-15%, the yellow-legged gull *Larus michahellis* in the Western Mediterranean is increasingly viewed as a threat to communities, ecosystems and ultimately humans. Despite the high mobility of the species, populations show contrasting demographic parameters and different population growth rates. I begin by reviewing differences in demographic parameters and feeding ecology across populations of the Western Mediterranean. I then illustrate the role and lessons from demographic models and the (theoretical) guidelines for the management of the species. I will conclude with two recent examples of successful management to mitigate the impact of yellow-legged gulls on other seabirds and to restrain population increase.

DEMOGRAPHY:

The yellow-legged gull in Gipuzkoa: a review of 15 years of research.

Juan Arizaga¹, Alfredo Herrero¹, Asier Aldalur¹, Nere Zorrozuza¹, Sergio Delgado¹, Maite Laso¹.

¹Aranzadi Sciences Society, Spain. Contact: jarizaga@aranzadi.eus.

In 2005, the Department of Ornithology of the Aranzadi Sciences Society started a long-term ringing scheme of the yellow-legged gull *Larus michahellis* breeding in the province of Gipuzkoa, Basque Country, Spain. The aim of this presentation is to offer a general overview of the work done until now, 15 years after the initiation of the project. Overall, from 2005 to 2018, 3,649 chicks were colour-ringed in mostly three colonies, apart from 146 adult breeding birds. Up to June of 2019, we obtained 21,650 'recoveries', of which 21,553 (99.6%) were sighting, with the rest being true recoveries (birds found dead or injured). All these data have been used to estimate dispersal patterns as well as to obtain demographic parameter estimates, such as survival variation between age classes and colonies or recruitment. Additionally, (1) we have also marked 54 adult birds with GPS, allowing us to obtain very detailed information, complementary to that obtained with ringing data; (2) we have collected regurgitates and feather samples to run mixing models based on stable isotopes to study the trophic ecology of the population and the changes promoted by the closure of open-air landfill sites. During the talk, the main results and conclusions derived from all this work will be summarized.

DEMOGRAPHY:

The role of anthropogenic food sources in gulls – investigating landfill effects on chick production and chick body condition.Anna L. K. Nilsson¹, Morten Helberg¹, Arild Breistøl¹, Tore Slagsvold¹¹University of Oslo, Norway. Contact: anna.nilsson@ibv.uio.no

While growing human populations and urbanization often affect birds negatively, many gull species benefit from human-derived food resources at landfills sites, fishing industries, agricultural areas and cities. Indeed, gulls seem to adapt surprisingly well to anthropogenic influences, and in some populations of gulls, refuse-derived food may be the dominant food source. However, despite numerous studies demonstrating the use of landfill sites as gull foraging grounds, there are no direct quantitative studies on vital fitness components such as breeding success. In this study, we investigate how the distance to landfills from breeding colonies affects chick production and their body condition, and whether adults' use of landfills affects chick production and chick body condition in breeding colonies of herring *Larus argentatus* and lesser black-backed gulls *L. fuscus*. We measured chick production, chick body condition, colony size, phenology, and distance to the local landfill site, and compared the results to adult ring recoveries at the local landfill in 12 (herring gull) and 11 breeding colonies (lesser black-backed gull), respectively, in an archipelago in S. Norway during 2011-2018. Overall, it seemed as distance to landfills had a negative impact on lesser black-backed gull chick production, while it had a positive impact on herring gull chick production. We demonstrate and discuss annual and seasonal variation, colony variation, density effects, and effects of adult foraging strategies. Our study sheds light on the significance of landfill sites and on important differences in chick production and body condition between the two gull species.

Negative effects of landfills on chick body condition

(10) more dependent on landfill than LBBC

DEMOGRAPHY:

The largest roof-top colony of large white-headed gulls in Eastern Europe (Gatovo colony, Belarus).

Irina Samusenko¹, Alexander Pyshko

¹Institute of Zoology, Scientific and Practical Center, NAS, Belarus. Contact: isamusenko@gmail.com.

The Gatovo colony is located on a roof of industrial building (with area of 11.5 ha) in Minsk vicinities, central Belarus. The constant growth in numbers has been observed since colony formation in the early 2000s. Detailed studies were carried out here from April to July-August in 2018-2019. Now *L. cachinnans* (predominated), *L. argentatus*, *L. fuscus* and numerous hybrid forms are breeding here. Presumably female *L. michahellis* was breeding in the colony in a mixed pair in 2019, that requires confirmation. In total 3,406 nests were recorded in 2018; 4,088 - in 2019 during special nest censuses from the end of April to early May. The average breeding density was 356.7 nests per ha with maximum of 492.4 nests per ha in core area in 2019. Phenology, breeding success (clutch size, chick mortality), age of breeders, ways of colony formation based on ring registrations, and other aspects of the breeding biology have been studied. In total 227 ringed birds were registered in the colony during our investigations: 150 – in 2018, 198 - in 2019. They were ringed in Belarus (178), Poland (11), Lithuania (10), Ukraine (9), Denmark (8), Croatia (7), Germany (3) and The Netherlands (1). On the other hand, 108 birds were ringed in the colony in 2018 (as chicks), 373 – in 2019 (113 adults, 260 chicks).

DEMOGRAPHY:

Recruitment rates of yellow-legged gulls in the southeastern part of the Bay of Biscay.Sergio Delgado¹, Asier Aldalur¹, Alfredo Herrero¹, Juan Arizaga¹¹Aranzadi Sciences Society, Spain. Contact: sdelgado@aranzadi.eus.

Recruitment rate is one of the main factors shaping population dynamics in colonial seabirds. Low rates of recruitments is linked to populations with high dispersal, while high rates are linked to close populations where most birds would breed in the same colonies where they hatched. The Cantabrian yellow-legged gull *Larus michahellis* population is considered to be resident, with relatively low dispersal rates. Fine estimations of its recruitment rates are however still lacking. Here, we aimed to estimate recruitment rates in the main yellow-legged gull colonies of the province of Gipuzkoa, in the southeastern part of the Bay of Biscay. We analysed for that 853 sighting data, obtained during the breeding season at the colonies of Getaria, Santa Clara and Ulia, relative to a total of 3245 individuals ringed at chicks in these same colonies during a period of 13 years. These data were analysed using Multi-State Recapture models in MARK. The average dispersal rate among colonies was 4% when individuals are immature, decreasing to 1% for adult breeding gulls (i.e., recruitment rate was 99%). Annual survival rates were assessed to be 0.27 for birds in their first two years of life and 0.87 for older individuals. The probability of observing immature birds in the colonies was 0.08, as compared to 0.21 in adult birds. In conclusion, we obtained evidence that a high majority of the birds tend to breed in the same colonies where they hatched, indicating that recruitment rates in the studied colonies are extremely high.

MANAGEMENT:

Managing gull populations around airports, a safety issue.

Albert Cama¹, Ferran Navàs¹, Carme Rosell¹

¹Minuartia (Barcelona), Spain. Contact: acama@minuartia.com

Gulls have shown a very successful performance due to their commensalism relationship with humans. Rubbish, fish waste, fish farms, crops, farms and reservoirs, amongst others, are common human origin resources for gull populations around the globe. The high degree of interaction has led gull populations to settle in highly humanized areas, resulting in interference with human activities. One of these interactions is the risk of bird strike caused by gulls around airports, where planes fly at low altitudes and the safety hazards that these strikes entail –both for gulls and humans. The bird strike in Russia in August 2019 involving a gull flying to a rubbish dump near the airport has clearly shown their importance. Many culling actions on gull populations have been implemented to reduce their populations and solve coexistence conflicts, but these practices have to be sustained over time and are likely to produce emigration that can extend the problem. The management of resources that gull populations exploit in the surroundings of airfields is the main tool to control the safety risk related with their activity around airports. Studying gull behaviour is a very important instrument to locate the key resources. The most widely used methods for gulls management near airfields will be described.

DISEASES & POLLUTION:

Audouin's gull colony mercury temporal trends in a mercury-impacted ecosystem.

Moisés Sánchez-Fortún¹, Clara de Jover¹, Jazel Ouled-Cheikh¹, Manuel García-Tarrasón¹, Josep L. Carrasco¹, Carola Sanpera¹

¹Departament de Biologia Evolutiva, Ecologia, Ciències Ambientals, Universitat de Barcelona and Institut de Recerca de la Biodiversitat (IRBio), Spain. Contact: m.sanchez-fortun@ub.edu

Seabirds, as top-predators in marine ecosystems, are regarded as appropriate bioindicator groups for a different array of contaminants. In the case of mercury (Hg), its biomagnification mainly occurs in aquatic environments. Therefore, mercury body burden in seabirds, such as gulls, will integrate information about the pollution in the environment. In the Ebro Delta (NE Spain), the legacy mercury pollution from a chlor-alkali industry located ca. 100 km upstream the Ebro river mouth has been impacting all the environments on the delta. We have analyzed a 15-year temporal series (from 2004 to 2019) of Hg in a breeding colony of Audouin's gull *Ichthyaeus audouinii* in the Ebro Delta to understand how fluctuations in Hg levels are coupled to human activities in the industrial area upstream the river. Complimentarily, we have analyzed compound-specific stable isotopes of amino acids (AA-CSIA) to discern possible confounding effects of trophic level changes in the population over time affecting the Hg levels observed. We found Audouin's gull to be sensitive to Hg variations in the environment due to anthropogenic changes and to be a good indicator species for this contaminant in the area.

CSIA - AA → determine levels of isotopes of the base of food chain

TROPHIC ECOLOGY AND HABITAT USE:

Spatial and trophic ecology of yellow-legged gulls: its usage as sentinels of environmental and public health (insights into the SENTIGULLS project).

Raül Ramos¹

¹University of Barcelona, Spain. Contact: ramos@ub.edu

To properly decipher the processes underlying the complex dynamics and spread of infectious agents and pollutants in the environment, we often require long-time series of sampling and assessments at multiple sites. Synanthropic species, those abundant free-living top predators in close contact with human activities, are often suggested as ideal biomonitoring candidates (i.e., sentinels), as they integrate, predictably, infectious agents and pollutant levels along the food chains they rely on. Within a long-scale research project (SENTIGULLS) and given the global distribution of large gulls that currently links natural and urban settings, we will evaluate their long-term potential as sentinel species in the Mediterranean region, and will determine the processes involved in the exposure to infectious agents and pollutants in this system. Specifically, we will present here results of a long-term monitoring program carried out on the yellow-legged gulls *Larus michahellis* of the Medes Islands (Northeast Spain) throughout last decades (since 2004 to 2019). Hierarchical Bayesian mixing models (MixSIAR) based on stable isotope analysis of carbon ($\delta^{13}\text{C}$), nitrogen ($\delta^{15}\text{N}$), and sulphur ($\delta^{34}\text{S}$) of chick regurgitates and feathers allow us to reconstruct and track changes in gulls diet distinguishing among marine, refuse and terrestrial prey contributions. Additionally, we will present preliminary results on short-distance movements of adult gulls breeding in Medes Islands and deployed with GPS SigFox™ devices in 2018. Our results matched our expectations derived from two European Union (EU) Action Plans, the EU Landfill Directive (1999/31/CE) and the Reform of the Common Fisheries Policy (EU/1380/2013), both aiming at decreasing the gull accessibility to two anthropogenic resources: waste and fishery discards. Finally, we will present and briefly develop the main scope and aims of the SENTIGULLS project: (1) assessing the spatial and trophic ecology of several gulls throughout their annual cycle, and, (2) relating such ecologies to specific pathogen prevalence and pollutant burdens of these gulls.

TROPIC ECOLOGY AND HABITAT USE:

Time and energy costs of different foraging choices in an avian generalist species.

Alejandro Sotillo¹, Jan M. Baert¹, Wendt Müller¹, Eric W. M. Stienen¹, Amadeu M. V. M. Soares¹, Luc Lens¹.

¹Ghent University, Belgium. Contact: alejandro.sotillogonzales@ugent.be

Animals can obtain a higher foraging yield by optimizing energy expenditure or minimizing time costs. We assessed how individual variation in the relative use of marine and terrestrial foraging habitats relates to differences in the energy and time investments of an avian generalist feeder [the lesser black-backed gull *Larus fuscus*], and how this changes during the course of the chick-rearing period. To this end, we analyzed 5 years of GPS tracking data collected at the colony of Zeebrugge (Belgium). Cost proxies for energy expenditure and time costs, together with trip frequency, were analyzed against the relative use of the marine and terrestrial habitats. The marine habitat was most often used by males and outside weekends, when fisheries are active. Marine trips implied higher energetic costs and lower time investments. As chicks became older, terrestrial trips became more prevalent, and trip frequency reached a peak towards 20 days after hatching of the first egg. Over a full chick rearing period, energy costs varied between individuals, but no trends were found across the marine foraging gradient. Conversely, a higher use of marine foraging implied lower overall amounts of time spent away from the colony. Foraging habitat choice therefore related to overall time costs incurred by foraging gulls, but not to energy costs. Sex differences in foraging habitat attendance and the effect of chick age on attendance and effort, may imply that the impact of changes in environmental factors affecting foraging costs will be sex-conditioned, and affect differently the various stages of chick growth.

body condition of chicks fed on marine food higher

TROPHIC ECOLOGY AND HABITAT USE:

Trophic ecology of the yellow-legged gull population breeding on the Basque coast.

Nere Zorrozua¹, Asier Aldalur¹, Alfredo Herrero¹, Juan Arizaga¹.

¹Aranzadi Sciences Society, Spain. Contact: nzorrozua@aranzadi.eus.

The closure of open air landfills provides a good opportunity to evaluate the consequences of this resource in the trophic ecology of an opportunistic species that takes benefit of it: the yellow-legged gull *Larus michahellis*. Based on stable isotopes and mixing models, we analysed the changes that have occurred in diet after the closure of landfills, in the breeding period and out of it. We observed a decline in the consumption of this resource after its closure, which was accompanied by an increase of terrestrial origin prey, but only in the breeding period. Additionally, significant trophic differences were found among colonies located quite near from each other, while no differences were observed between adult and chicks' diet. Furthermore, such variation among colonies was also detected in another study, where distance to the nearest fishing harbour was found to have a stronger effect on yellow-legged gull chicks' diet than distance to the nearest landfill site. Besides, fishing harbours showed a very high impact on diet at the local scale, though only a limited effect at regional scales. Moreover, colonies which consumed a higher proportion of marine prey showed better population trends. Hence, the policies of the EU towards the reduction of fishing discards and the closure of landfills will probably lead to changes in the trophic ecology and dynamics of yellow-legged gull populations.

terrestrial diet ↓ during winter for adults

TROPHIC ECOLOGY AND HABITAT USE:

Ecology of an opportunistic predator living in an urban ecosystem: the yellow-legged gull in Barcelona.

Raül Aymí¹, Tomás Montalvo, Joan Navarro

¹Institut Català d'Ornitologia (Barcelona), Spain. Contact: ico@ornitologia.org

Human activities do not affect all species in the same way and landscapes transformed by human development may still provide welcoming environments for opportunistic species able to colonise such habitats and increase their population sizes. This is the case of various avian species that exploit the opportunities provided by humans in urban areas. This ongoing project studies the spatial ecology, habitat use and trophic habits of the urban population of yellow-legged gull *Larus michahellis* in the city of Barcelona, and how these foraging-related aspects affect its pathogen load and dispersion, contaminant levels and physiological state. Preliminary results from a combination of individual marking programs (colour rings), GPS-tracking, trophic metrics (stomach content and isotopic markers), ecophysiological parameters and epidemiological measures (bacteria and virus) reveal regular dispersal and feeding movements of different distances that enable yellow-legged gulls to exploit urban habitats and human-related installations close to the city. As well, we found age-related differences in gulls' spatial distribution. Surprisingly, Barcelona's yellow-legged gulls mainly exploit avian resources (urban pigeons and exotic parrots), and then marine resources and food present in waste. We found that part of the population depends on food provided by humans. Spatial and trophic results explain inter-individual differences in the results for pathogen and pollution levels. In conclusion, this project is a clearly example of how multidisciplinary studies of wildlife living in urban ecosystems can help understand the way in which this and other species have adapted to human-related environments.

TROPHIC ECOLOGY AND HABITAT USE:

"Sea" gulls or "Land" gulls? The study case of the yellow-legged gull in the oceanic island of Madeira.

Joana Romero¹, Paulo Catry, Dília Menezes, Nádia Coelho, João P. Silva, José P. Granadeiro

¹CESAM, Departamento de Biologia Animal, Faculdade de Ciências da Universidade de Lisboa, Portugal. Contact: j-romero@live.com

Yellow-legged gulls *Larus michahellis atlantis* have a generalist and opportunistic behaviour that allows them to exploit different environments and resources within both natural and human-modified areas. This behaviour sometimes poses problems related to aircraft security, public health or predation on other species. We examined the distribution and foraging behaviour of yellow-legged gulls on the oceanic island of Madeira using GPS-GSM devices and stable isotope analysis of samples of blood (adults) and feathers (chicks). Tracked yellow-legged gulls did not migrate. Birds remained mostly inland during the day (up to 60% of fixes) with barely 5% of the fixes located at sea. Eighty out of 192 gull trips to the sea were in interaction with purse seiners that were active at night. The diet of adult yellow-legged gulls was generalist (garbage, fish, other seabirds), whereas the chicks were mainly fed fish. The desired control of the yellow-legged gull population from the oceanic island of Madeira could perhaps be achieved by a reduction of accessibility to organic waste in order to reduce their dependence on anthropogenic resources.

TROPHIC ECOLOGY AND HABITAT USE:

Habitat use and spatial ecology of a yellow-legged gull population as revealed by GPS-tracked birds.

Nere Zorrozua¹, Asier Aldalur¹, Alfredo Herrero¹, Maite Laso¹, Sergio Delgado¹, Juan Arizaga¹.

¹Aranzadi Sciences Society, Spain. Contact: nzorrozua@aranzadi.eus.

The use of remote-sensing devices, such as GPS, has allowed to increase our knowledge on the spatial ecology of birds with a degree of detail impossible to be achieved using only ringing data. In this context, between 2016 and 2019 we tagged a total of 54 adult yellow-legged gulls *Larus michahellis* with GPS (provider: Wimbitek). Our aim was to know with as much details as possible the territory use of the local breeding populations, as well as to identify the main trophic sources used by this population. In June of 2019, we already had a data set of 121,092 locations. In this talk, we will summarize the main results of this work. Overall, the territory use varied between even rather nearby colonies, highlighting the importance of close feeding sources in the spatial ecology. In general, our population exploited more terrestrial or coastal (fishing harbours) habitats than marine habitats. The link between foraging displacements in the sea and the activity of fishing vessels is not clearly observed, suggesting that our gulls do not depend on the fishing activity at sea, but rather and most probably, on the discards produced in the harbours, among other trophic resources.

Max distance during breeding =

METHODOLOGIES:

Using automatic cameras for ring reading in gull colonies and landfill sites.Morten Helberg¹, Arild Breistøl¹¹University of Bergen, Norway. Contact: Arild@uib.no

Since 2014 we have used commercially available automatic cameras for ring reading in gull colonies and landfill sites in Norway. Here we present our experiences of the most useful camera settings and how to proceed when placing the cameras at the sites. We also give recommendations of housing for protection and camouflaging the cameras. In the end we will present some of our results of this method of reading rings, which has proven to add valuable information about nesting and visiting birds.

METHODOLOGIES:

Methodological issues... 1) Durability, wear and readability of read-rings; 2) Live-cameras as a gull study method.Risto Juvaste¹¹University of Turku, Finland. Contact: risto@juvaste.fi

1) Materials and designs. False reads. Some examples. Discussion. 1) Last summer I had a LokkiLive-camera in a breeding colony. It was a nice experience, though the camera was a stationary one. It worked fine 3 months without any service. Next summer I may put many Live-cameras (about 10 ones). I aim to use mainly ones, which have possibility to pan and zoom. A couple of video clips.

www.LokkiLive.fi

TAXONOMY:

The Algarve – a yellow-legged gull melting pot.Carl Bagott¹¹Portugal. Contact: cdbaggott@gmail.com

More than one subspecies of yellow-legged gull *Larus michahellis* is present in The Algarve, but identification to subspecies, or even species level can be difficult. Individual Darvic-ringed gulls, photographed over several years, help with this challenge.

TAXONOMY:

Status of the black-headed gull in NorwaySindre Molværsmyr¹¹Previously University of Oslo (unaffiliated at the moment), Norway. Contact: sindre.molv@gmail.com

In 2018-2019 I did my master thesis on the black-headed gull *Chroicocephalus ridibundus* colonies in Oslo. The title of the thesis was "Colony formation and breeding success in the rapidly declining black-headed gull". In this presentation I will present the key findings from my thesis, as well as share how drone photographs can be an invaluable tool for counting gull colonies in the future.

DISEASES & POLLUTION:

Spatial dynamics of the circulation of infectious disease agents in coastal areas: gulls as sentinels.Thierry Boulinier¹, Raül Ramos², Juliet Lamb³, Amandine Gamble⁴¹CEFE CNRS-Université Montpellier, France; ²University of Barcelona, Spain; ³University of Rhode Island, USA; ⁴University of California, Los Angeles, USA. Contact: thierry.boulinier@cefe.cnrs.fr

Infectious diseases present a significant and growing threat to public health, domestic livestock production, and biodiversity conservation. Gulls which associate with and exploit anthropogenic food sources are particularly likely to interact with human-associated pathogens and zoonotic agents, making them useful candidates for monitoring risks of disease exposure. Moreover, studying exposure of colonial birds to infectious agents can tell us about their movements at a hierarchy of spatial scales and potential implications for pathogen spread. We will outline how targeted field data collection, laboratory analysis (notably immuno-assays on egg yolk samples), and quantitative modelling could be used to develop a mechanistic understanding of the factors affecting prevalence and circulation of infectious disease agents in gulls in coastal areas. To illustrate this, we will report results from an ongoing long term collaborative study on exposure of the yellow-legged gull *Larus michahellis* to avian influenza viruses, a tick-borne flavivirus and the parasite *Toxoplasma gondii* in the western Mediterranean basin. Perspectives of future collaborative work involving field experiments, the tracking of movements of breeders and a combination of sampling schemes, notably the efficient sampling of partial clutches (1 egg per clutch), will be discussed.

DISEASES & POLLUTION:

The use of seabird to monitor marine contamination in the MSFD context in France: results of the pilot study.

Gauthier Poiriez¹, Aurélie Blanck, Sophie Poncet, Nathalie Wessel, Aourel Mauffret, Gilles Le Guillou, Fabrice Gallien, Pascal Provost, Marine Leicher, Julien Gernigon, Thomas Blanchon, Carole Leray, Karen McCoy, Alain Mante, Célia Pastorelli, Thierry Boulinier, Paco Bustamante.

¹UMR 7266 LIENSs. Contact: gauthierpoiriez@yahoo.fr

The Marine Strategy Framework Directive (MSFD) aims to achieve or maintain a good environmental status (GES) in marine European waters. Monitoring programs are implemented to acquire data for the marine status evaluation. Among descriptors of the GES, one concerns contaminants and their effects on organisms. Seabirds provide integrated information about biomagnification, thus appear relevant bioindicators of contaminants at large scale for MSFD. Here, we present the results of the 2019 pilot study, implemented to test the feasibility of such a monitoring program. Gulls feathers were collected during ringing of chicks. Thus, a limited number of sites, where such programs were running, were selected. Blood, down and eggs were analysed when research programs allowed their sampling. Among the seabird species sampled, we monitored four species of gulls: *Larus marinus*, *L. fuscus*, *L. michahellis*, and *L. argentatus*. We analysed mercury this year, and are planning to extend to other pollutants (metals, POPs), stations, types of samples. We detected interspecific and geographical differences in mercury concentrations. *L. marinus* shows the highest contamination, and *L. argentatus* the lowest (sometimes <1 ppm). *L. michahellis* mean mercury concentration is three times higher in a Bay of Biscay site (isle of Rhé) than a Mediterranean site (Camargue).



DISEASES & POLLUTION:

Causes of seagull admissions into a rehabilitation center in Portugal.

Rute Costa¹

¹CESAM - University of Aveiro, Portugal. Contact: rutealexandra@gmail.com / rute.costa@ua.pt

This study presents data on live seagulls admitted to a Marine Animal Rehabilitation Center (CRAM) and dead seagulls collected by the stranding network, both operating in central Portugal. During a five-year period (2014–2018) a total of 1447 seabird admissions were registered, from which 783 (54%) were seagulls. The main causes for seagull live admissions were trauma (51%, n=383) and intoxication (21%, n=164). A total of 259 seagulls (35%) were released to the wild following rehabilitation, 105 (14%) died during the rehabilitation process and 376 (51%) were considered untreatable after diagnosis and were euthanized. Yellow-legged *Larus michahellis* and lesser-black backed gulls *Larus fuscus* were the most admitted species and for these species we also analyze time until death and time until release, with both species having an average of 26 and 27 days of treatment before release. The preliminary results of the colour ring scheme observations associated to CRAM presented positive information regarding the released seagulls.

DISEASES & POLLUTION:

Gulls and zoonoses.

Luka Jurinović¹

¹Croatian Veterinary Institute, Poultry Centre, Croatia. Contact: luka.jurinovic@gmail.com.

Gulls were captured between 2007 and 2019 on the Zagreb city rubbish tip (45.45 N 16.01 E) in order to collect cloacal swabs. They were tested for the presence of avian influenza, *Salmonella* and *Campylobacter*. As already known, gulls are carriers of all of these microorganisms, but deeper insight gave us conclusion that vast majority of isolates we were able to circulate among gulls and do not represent the major threat for humans and poultry.

Extra documentary: On foggy winter morning the gulls are massively feeding on human trash on the Jakuševac rubbish tip. The biologists are using this opportunity to catch them for testing on diseases transmittable to humans. By Sunčica A. Veldić.

MOULT:

Suspended primary moult in adult Dutch herring gulls.

Maarten van Kleinwee¹

¹The Netherlands. Contact: mvkleinwee@gmail.com

Suspended primary moult is a known feature in lesser black-backed gulls *Larus fuscus* but hardly anything is known about it in herring gulls *Larus argentatus*. In this talk I will show examples found in colour-ringed individuals from the IJmuiden gull colony, explain when and why it occurs, and why so little is known about it.

TROPHIC ECOLOGY AND HABITAT USE:

Foraging while migrating in non-breeding seabird populations: insights from multidisciplinary approaches.

Maite Louzao¹, Isabel García-Barón, Amaia Astarloa, Arkaitz Pedrajas.

¹AZTI-Tecnalia, Spain. Contact: mlouzao@azti.es.

During migration, marine predators move through the seascape searching for prey that varies spatially across different water masses/regions and vertically through the water column. In particular, predators could stop at few key locations for increasing refueling opportunities and they usually visit the same areas year after year. For numerous top predators, the Bay of Biscay (BoB) represents a key feeding area during certain periods of the year (e.g., seabirds, tuna and marine mammals). Here, we took advantage of integrated ecosystem surveys that monitor the pelagic ecosystem of the BoB to study the distribution patterns of non-breeding seabird populations. Moreover, we studied the influence of predictable anthropogenic food subsidies (PAFS) such as fishing discards by simultaneously monitoring on board commercial demersal trawlers operating in the Bay of Biscay. We aimed at establishing the temporal abundance variation, characterizing discard assemblages and assessing the relationship between environmental and fishing drivers on seabird community indices. Our results are discussed within the current European environmental legislation.

most seabirds in february attending trawlers

Baer et al 2018 → migration of LBB6

6000 ⊕ deep in autumn

TROPHIC ECOLOGY AND HABITAT USE:

Movements of suburban yellow-legged gulls in NW Galicia.

Cosme D. Romay¹

¹Grupo Naturalista Hábitat & Universidade da Coruña, Spain. Contact: c.d.romay@udc.gal.

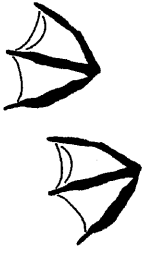
Data from the 2011-2014 ringing scheme of yellow-legged gulls *Larus michahellis* at San Pedro islands (near A Coruña city, NW Galicia) are summarized. A majority of the ring reads were obtained in localities within 20 km of the colony, with some sightings from the Cantabrian sea, Portugal and even the Cádiz Gulf. The online web form, with automatic generated PDF life histories, is also highlighted.

anelas - gn habitat. org





SOCIEDAD DE CIENCIAS
SCIENCE SOCIETY
SOCIÉTÉ DE SCIENCES

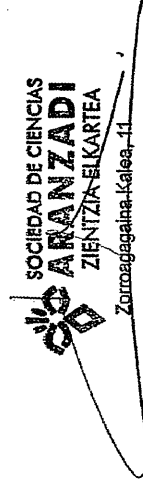


International Gull Meeting

San Sebastián 2019

CERTIFICATE

Poiriez Gauthier has attended the International Gull Meeting 2019 held in San Sebastian (Gipuzkoa, Spain) from November 14 to 16, 2019.



Juantxo Agirre Mauleon
Idazkari nagusia / Secretario General

