1° CONGRESSO NAZIONALE

ETOLOGIA · ETICA CONSERVAZIONE

4 - 5 MAGGIO 2019 ROMA

ETICOSCIENZA®

1° Congresso Nazionale di Etologia, Etica e Conservazione

BOOK OF ABSTRACTS

edited by
Grasso C. & Lenzi C.

Associazione ETICOSCIENZA

Indice

4 e 5 maggio 2019

1° Congresso Nazionale di Etologia, Etica e Conservazione

Sede

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ETICOSCIENZA è un' Associazione di promozione sociale nata il 7 Maggio 2018 dall'idea innovativa di due scienziati specializzati in comportamento animale, la Dott.ssa Chiara Grasso (Presidente) e il Dott. Christian Lenzi (Vice Presidente), fondatori dell'Etologia Etica®.
ETICOSCIENZA si propone di svolgere servizi nei settori della formazione, divulgazione scientifica, eco-turismo, educazione ambientale, ricerca scientifica, volontariato naturalistico ed attività culturali. L'Associazione basa tutte le sue attività sui principi che riguardano l'Etologia Etica®.
L'Etologia Etica® è una disciplina scientifica che si occupa di tutte le questioni morali e zoo-antropologiche che coinvolgono la fauna e la Natura più in generale. Si tratta di un nuova materia multidisciplinare che ha l'obiettivo di studiare il corretto e rispettoso approccio tra gli umani e gli altri animali.

Con il patrocinio di

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Con il contributo di

Le Scienze

Programma

4 MAGGIO 2019

09:00 Inizio registrazioni

09:45 Inizio lavori

10:00 - **Christian Lenzi**
Turismo, cattività e social media: discussioni etologiche tra etica e conservazione

10:30 - **Augusto Vitale**
Etica e sperimentazione animale: un connubio possibile

11:00 Pausa

11:30 - **Elsa Addessi**
Oltre la ricerca. Gli studi cognitivi promuovono il benessere dei primati in cattività

12:00 - **Rossana Astolfi**
Effetto della presenza di visitatori sul comportamento e sulla risposta endocrina nei gibboni siamango

12:15 - **Monica Carosi**
Antropomorfismo e antropodiniego: il diavolo e l'acquasanta?

12:45 - **Daniela De Donno**
Dallo scimpanzè all'Uomo: contribuire al benessere delle popolazioni locali vuol dire contribuire alla salvaguardia degli animali

13:15 Pranzo

14:30 Sessione Poster

15:00 - **Alessandro Nicoletti**
Borneo: il paradiso perduto - tra sostenibilità e conservazione

15:30 - **Giovanni Pastorino**
Comportamento e personalità in un pride di leoni Asiatici

15:45 - **Elia Gatto**
L'utilizzo di informazioni sociali nelle api solitarie che nidificano nelle cavità

16:00 Pausa

16:30 - **Claudio Carere**
Storni, gabbiani, e altri clandestini (s)piacevolmente urbanizzati

17:00 - **Francesca Buoninconti**
Ornitologia, conservazione e convivenza etica

17:30 - **Antonino Morabito**
In Italia, etologia ed etica prevalgono sul profitto nelle plurali relazioni con animali selvatici e domestici?

18:00 - **Diego Parini**
Come spioncello (*Anthus spinoletta*) e culbianco (*Oenanthe oeananthe*) confermano il cambiamento climatico

18:15 - **Martina Fabbroni**
Studio delle preferenze innate per alcune caratteristiche chiave del movimento animato nel pulcino di pollo domestico (*Gallus gallus domesticus*)

18:30 Fine lavori

5 MAGGIO 2019

09:00 Inizio lavori

09:30 - **Pasqualino Santori**
Benessere animale nelle produzioni

10:00 - **Simone Pollo**
Il rispetto degli animali selvatici: distanze e convivenze

10:30 - **Claudia Troiano**
Strategie ed etica nel modellare gli ecosistemi montani utilizzando la fauna domestica

10:45 - **Gemma Alesci**
Modificazioni dei livelli sierici di serotonina e osservazioni comportamentali in asini adibiti ad Interventi Assistiti con gli Animali: uno studio preliminare.

11:00 Pausa

11:30 - **Enrico Alleva - Diego de Simone**
Dalla prosocialità all'aggressività: il ruolo dell'ossitocina

12:00 - **Francesca Cirulli**
Interventi assistiti con gli animali: un rapporto antico in trasformazione

12:30 - **Adele Tuozzi**
Effetto della voce umana sul comportamento dei gatti ospitati nei rifugi, in assenza o in presenza della persona

12:45 Pranzo

14:00 - **Marco Galaverni**
Convivenza Uomo - Grandi carnivori nel mondo: tra insidie e speranze

14:30 - **Marco Antonelli**
Il ritorno naturale del lupo e le strategie di coesistenza: il caso-studio di Castel di Guido (RM)

15:00 - **Andrea Gallizia, Federica Bava, Francesca Trenta**
Lupo, cane e Uomo: aspetti etologici e interazione in nuovi contesti di colonizzazione

15:30 - **Greta Lanzoni**
Benessere animale in cattività: l'influenza dei visitatori sul comportamento del *Canis lupus signatus* e strumenti di educazione ambientale

15:45 - **Alessandra Moreni**
Imparare dalle stelle di mare: la rigenerazione degli stadi giovanili di *Echinaster sepositus*

16:00 Sessione Poster

16:30 - **Ilaria Campana**
Un mare nei guai: esempi di monitoraggi e valutazione degli impatti antropici in ambiente marino

17:00 - **Luca Marisaldi - Andrea Ferrari**
L'Uomo e la tartaruga marina: una convivenza in alto mare... Adriatico

17:30 Premiazione

18:00 Fine lavori

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Speaker invitati

Ogni eventuale errore relativo a contenuti, stile e lingua presente negli abstract degli interventi va attribuito esclusivamente agli Autori, che se ne assumono ogni responsabilità.

1° Congresso di Etologia, Etica e Conservazione

Tourism, captive wildlife, and social media: ethological discussions of ethics and conservation

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The opportunities for tourists to be entertained by wild animals, to have a 'once in a lifetime' experience, is a worldwide phenomenon. In many cases, visitors to zoos, aquaria, and sanctuaries have the opportunity to interact directly with wild animals through feeding, touching, or washing. These wild animals may be kept in captivity and bred only for this purpose to facilitate tourist encounters.

This 'hands-on' contact with wild animals generates various problems related to environmental ethics and animal welfare, as well as the health-linked risks of human-wild animal contact such as zoonoses. Furthermore, it may contribute to a loss of 'respect for nature,' in which the wild animals encountered are presented in unnatural environments, 'Disneyfied', or portrayed as domesticated.

The sharing of photos and videos of tourists' wildlife experiences on social networks (i.e. Facebook, Instagram, Twitter, YouTube) can lead to detrimental welfare impacts which are usually minimized by coverage in the media on wildlife tourism. One could argue that social media contributes to the exploitation of wild animals in captivity in exchange for a desirable 'wildlife selfie', while it may also be directly or indirectly promoting the illegal wildlife trade. As widely documented in the scholarship, the image of 'humanized' wild animals, such that they are portrayed as pets and/or in unnatural environments, can have serious impacts on our perception of wildlife. This includes our potential underestimation of conservation issues, the threat of endangerment many wild animals face, and an increasing desire to keep wild animals as pets.

Therefore, increasing consumer awareness of these issues is integral to improcing wild animal welfare and conservation. Informed choices as tourists seeking animal entertainment at sites of wildlife tourism such as zoos, aquaria, and other animal experiences can help to decrease the desirability for expolitative encounters, even when they are masked as 'ethical.'

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Ethics and Animal Experimentation: A possible fruitful relationship

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The number of animals used in animal experimentation in the Member States of the EU amounts around 11.5 million. It is a very relevant number, which makes the case of the use of animal models a relevant topic in different terms, scientific, ethical, social and economical. In this presentation I will offer some points for discussion on the relationships between ethics and animal experiments. I will not then discuss whether animal experiments are morally acceptable or not, but how an ethical approach to the use of animals can both improve the quality of life of experimental subjects, as well as the quality of science, and improve the social acceptance of such practice. The current legislation on the protection of animals used for scientific purposes regulates all of the different aspects of animal experimentation. I will discuss how such legislation tries to marry the notion that animals have to be considered sentient beings and the need for scientifically-sound data, both for basic and translational research. In particular I will consider the evolution of the concept of cost/benefit ratio, and the application of the 3Rs Principle.

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Beyond research. Cognitive studies promote the well-being of captive primates

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In the last decade, there has been a growing interest for the effects of non-invasive cognitive testing on the well-being of non-human primates. Individual cognitive testing may affect the well-being of the experimental subjects, as well as their social interactions with group members upon their return to the social group, and thus the well-being of other individuals. However, the voluntary participation in cognitive testing suggests that this activity is enriching and the few studies carried out so far have reported that cognitive testing has positive effects on the well-being of non-human primates. Indeed, at the individual level, cognitive testing reduces stress-related behaviours and, at the group level, it promotes affiliative behaviours and reduces aggressive behaviours. However, in previous studies participants were tested individually, and no study has so far explored the effect of social testing, a potentially stressful component of cognitive tasks, on individual's stress response and social behaviour. To this aim, we tested 14 tufted capuchin monkeys (*Sapajus* spp.) in a risky decision-making task in which they were presented with a series of choices between a safe, constant option (two food units), and a risky, variable option (zero or six food units, with a 70% probability of no reward), when alone (Alone condition) or when together with a group member (Social condition). We observed an increase of affiliative social interaction and a decrease of aggressive behaviours after testing, regardless of condition, compared to non-testing days. These data adds to the growing body of literature suggesting that participating in cognitive tasks represents a source of environmental enrichment that can improve the well-being of captive primates. At the same time, the constant assessment of animal welfare during cognitive tasks may provide useful information for developing better experimental and management practices and improving the quality of cognitive data.

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Anthropomorphism and anthropodenial: the devil and the holy water

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"*Nevertheless the difference in mind between man and the higher animals, great as it is, certainly is one of degree and not of kind*" (Darwin, 1871 the «Descent of Man and Selection in Relation to Sex», p. 85). Darwin was the first who blurred the straightforward border which had always kept human and non-human animals apart. In ancient times anthropomorphism referred to the ascription of human qualities to angels and God, however about time when Darwin made public his revolutionary evolutionary ideas, the concept of anthropomorphism was for the first time related to animals: "…*we are incessantly at fault in our tendency to anthropomorphise, a tendency which causes us to interpret the actions of animals according to the analogies of human nature*" (George Herbert Lewes, 1860, p. 385). Among non-human animals, especially great apes have been considered as invaders of those empty "*terrains vagues"* between human and non-human animals, revolutionary creatures that instead of softening the borders have been by some considered as threatening human uniqueness and dignity. Anthropodenial (de Waal, 1999), as opposed to anthropomorphism, is the stronger refusal of any shared characteristics between humans and other animals. Is incompatibility between anthropomorphism and anthropodenial an insoluble conflict? Now, as "cognitive parsimony", *i.e.,* explaining behavior by appealing to the lowest possible mental capacities, is usually accepted and favored, "evolutionary parsimony" should also be: if closely related species act similarly, probably they have similar mental processes. If "bambification" (de Waal, 2002) can never be good science, nevertheless a categorical refusal of any continuity between other animals and us may in turn be responsible of worst consequences. Especially when research deals with specific scopes of application such as animal well-being, and when it refers to great apes, a passionate search for connections between their *Umwelt* (the world as it is experienced by an organism) and ours, may definitely be of completion and support to our scientific knowledge.

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From the chimpanzee to Man: cooperating for sustainability

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The Jane Goodall Institute's programmes reflect the organisation's holistic approach to wildlife research, conservation and education. We work to restore healthy habitat through community-centered conservation, achieving sustainable solutions where people, chimpanzees, and their habitats can all thrive. The engagement towards knowledge and protection of chimpanzees and their habitat represents the link between the conservation of the species and the wellbeing of the local population. Knowledge, cooperation to development and youth participation are some of the instruments adopted by The Jane Goodall Institute for fighting against environmental deterioration and poverty and contributing to the spreading of an ecological culture.

The experience of the JGI in conservation teaches us that it is necessary to adopt multidisciplinary and continuing measures in order to enter the local tissue and create a long-term impact. It is of paramount importance to draw the attention of a community that is facing problems that are very far away from those experienced in this part of the world and that in daily life is suffering from the lack of primary goods and technology.

Our objective is to protect the range of the African Great Apes, but strictly environmental interventions such as, for example, the creation of biological corridors cannot suffice: we must cope with a chain of problems linked with one another, which are also of enormous importance, such as overpopulation and illegal traffic.

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Borneo: the lost paradise - sustainability and conservation

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Palm oil is globally established as an important oil crop. However, its crops cause extensive deforestation especially in areas like tropical rainforest, which are very important seeing from an environmental point of view. Because of its high yields, palm oil produces about 35% of all vegetable oil on less than 10% of the land allocated to oil crops. The oil obtained from the palm oil fruits is a fundamental component in many sectors of industry, not just food.

Used both raw and refined, palm oil is used in the production of confectionery products, margarine, bread products and many more thanks to its properties in processing, for its taste and neutral smell. The palm oil crops also have the advantage of being not only economical but also very productive, the yield per hectare exceeds more than four times the other crops. The economic and technological advantages of palm oil have boosted production, leading crops to occupy over 18 million hectares in 2017 (Source IUCN), with a growing trend.

Although globally palm oil crops are the cause of deforestation for only 0.5%, in tropical areas this share reaches over 50%. Since almost all of the world palm oil production is concentrated in just two countries, Malaysia and Indonesia, the problem is getting worse in these areas.

This is particularly true on the island of Borneo, once one of the wildest areas in the world, where today most crops are concentrated. What may seem to be a marginal problem elsewhere, here it becomes a real tragedy. And this is the goal of Men of the Forest, a documentary film focused on the damage of crops, the struggles of local activists and the choices to be taken to ensure sustainable development for future generations.

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Starlings, gulls, and other (un)welcome guests: behavioural adjustments for a synanthropic life

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Anthropogenic environmental changes are widespread and pervasive. They pose an array of novel social and non-social challenges, together with new opportunities, to wildlife: some organisms seem precluded from colonizing urban environments, others do well, or even better than expected. Indeed, organisms markedly differ in their endurance and responsiveness to environmental alterations and this occurs at inter- and intra-specific level. Behavioural adjustments are often surprising and unexpected, but they are widespread and easily observable in many cases. They help individuals and populations dealing with urbanization. Behavioural differences between urban and rural populations constitute a good paradigm, and have been largely documented. I shall provide some relevant examples, especially in birds. The underlying mechanisms of these differences are less known, but I shall try to put forward some. Importantly, these behavioural differentiation can occur very rapidly and may involve cognitive skills, supporting the « plasticity-first hypothesis » on fast evolutionary emergence of novel traits and combinations of traits. At the same time, behavioural adjustments of urban vs non-urban animals could be driven and facilitated by new selection pressures and non-random sorting of personality traits, such as aggression or exploration, affecting the dispersal process, habitat choice and settlement in non-equilibrium phases. Understanding the mechanisms through which animals cope with major environmental alterations and new habitats is of paramount importance to predict future scenarios of population differentiation and dynamics, responses to global change and evolutionary potential, as well as to prepare us to assist wildlife populations in the best manner. In this respect, wildlife adjustments to the multivariate conditions of urban life offer the best “natural” experiment.

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Ornithology, bird conservation and ethical coexistence

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Between 2011 and 2018, Associazione ARDEA carried out two monitoring projects in Campania (Italy), funded by Regione Campania: "A beach for the Kentish plover", for the Kentish plover (*Charadrius alexandrinus*) and "Migrandata – Matese", for the barn swallow (*Hirundo rustica*). Both species are in the Italian IUCN Red List, threatened by habitat loss and direct destruction of the nests.

A major role in the conservation of these two species is played by environmental education and ethical coexistence in their natural habitat: the few coastal dunes left along Campania coasts, rural areas and wetlands with reeds. An ethical coexistence is possible, provided you follow a few simple rules. ARDEA has launched a campaign to raise people's awareness, achieving encouraging results.

As for the Kentish plover, since 2015 ARDEA has involved the managers of 6 seaside establishments and a total of over 1800 people, including students, citizens, and bathers in meetings and school projects. "A beach for the Kentish plover" has also attracted the attention of local media and has been the subject of an audio-documentary on Radio 3 - Rai. Thanks to these awareness raising projects and good coexistence practices, there has been a constant increase in fledging success of Kentish plovers: from 2014 to 2018 it increased from 15% to 50%.

"Migrandata - Matese", on the other hand, has seen the collaboration of 77 volunteers from different Italian regions and 25 trainees from two Campanian universities in 8 years of project. The ringing station has been visited by over 1600 people and the results of the monitoring have been the subject of 4 university thesis. The project has also seen the creation of a comic book printed and distributed in 2000 copies to local school and each year received the growing attention of local media, increasing citizens' awareness of this species.

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Animal welfare in zootechnical productions

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I believe that the whole of applied ethology needs ethical reflection.

The animal welfare useful in regulating and directing the intensive development of the breeding is not such as to be able to limit certain phenomena of the industrial breeding.

The animal based approach provides a step forward but the need for check lists and the integration into the production of agro-zootechnical productions chains diminishes the necessary recognition of the biological variety.

On the other hand, the ethology applied to pet animals especially in the case of "new pets", almost always wild in captivity, provides technical elements of evaluation but not real elements of moral reflection.

The involvement of the consumer also informed and aware of his own responsibilities on the basis of a bioethical reflection and not only on the emotional result of superficial and counterproductive emotionality could finally put an end to the trend of recent years.

The professions most directly involved in the human relationship with animals have a duty to start a debate on subjects that are apparently very much heard but in practice left to paternalistic and superficial evaluations.

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Respect for wild animals: distances and cohabitations

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In the ordinary understanding wild animal are those living in non-anthropized environments. Nonetheless, this very basic concept of wilderness is becoming more and more slippery and unreliable. On one side, consequences of human civilization are spread all along the planet, even in the most remotes locations. Plastic has been found in the deepest pits of the oceans and isotopes from nuclear bomb tests have been found in plants in the Amazon. On the other side, also anthropized environments, like cities, are plenty of animals whose existence does not depend from a human choice like in the case of domesticated animals. Wilderness is a charming concept, but it seems unable to fit into the present state of human/animal interactions and it is required some kind of new understanding of it. After having discussed the concept of wilderness, it will be raised the question of how human responsibility towards wild animals should be conceived. It will be discussed whether and how the concept of "respect" should be regarded as the key notion for articulating human responsibility towards wild animals. Like in the case of "wilderness" also the concept of "respect" will require some adjustments and caveat, that will be discussed and present.

Keywords: Wilderness, Respect, Animal Ethics, Animal welfare, Responsibility

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From prosociality to aggression: the role of oxytocin

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Oxytocin (OT) is a neuropeptide involved in the regulation of the social behaviour of multiple species, including invertebrates, rodents, non-human primates and humans. It modulates activities such as breastfeeding, sexual behaviour, empathy and even behaviours resulting in aggression, fear and anxiety. The aim of our research was to identify the possible correlations between the OT in the Central Nervous System and a sequence of social and non-social behaviours. Changes in OT levels were limited to four of the five behaviours analysed; in particular, the two behaviours indicative of a social bond under consolidation (push under and body contact) revealed a negative association, while the mutual circle display, which suggests the attempt to escape a fully social contact, did not reveal a significant association with OT levels. By contrast, none of the six non-social behaviours considered were associated with OT levels.

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Animal Assisted Interventions: exploiting the emotional potential of human-animal relationships

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The process of domestication has led to the emergence of selected physical characteristics and cognitive-behavioral traits that have allowed some animals, like dogs, to establish long-lasting social relations with humans. In dogs, the presence of a complex communication system is accompanied by the ability to elicit shared inter-specific emotional states, exploiting the same neurobiological mechanisms that underlie human attachment. Indeed, much like the relationship between the mother and her child, humans and dogs share gazes, which triggers the release of the neuropeptide oxytocin in the brain, resulting in a positive emotional feedback loop that reinforces the relationship. Studies carried out by our group have recently highlighted the importance of neotenic features (baby-schema) in the attitudes and preferences of children and adults towards animals. These characteristics have most likely been selected during the process of domestication, promoting human-animal relationships. The lecture will highlight how these data represent an important theoretical framework for the introduction of domestic animals in complementary rehabilitation practices such as Animal Assisted Interventions.

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Human-wildlife coexistence around the world, a balance between fears and hope

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The presence of species such as brown bears, wolves and wild boar roaming around our cities in Italy often surprises and sometimes scares us, if are not aware of the reasons behind their presence, leading to a wide media coverage that often exacerbates local conflicts. But in other regions of the world there are much more problematic species, such as tigers and elephants, living nearby or even inside large metropolis, like leopards in Mumbai or mountain lions in Los Angeles, not only causing damages to farming but also threatening human safety. The coexistence between humans and wildlife thus turns into a both practical and cultural challenge. Nonetheless, by implementing the proper strategies will it be possible to find new ways to coexist with nature on a smaller and smaller planet? We definitively think so.

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The natural return of the wolf and coexistence strategies: the case study of Castel di Guido (RM)

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The size and range expansion of the wolf population (*Canis lupus italicus*) in Italy, over the last few decades, was mainly caused by three social and ecological factors: (1) the legal protection of the species since 1971, (2) the human abandonment of mountains and countryside, with consequent increase of forested areas, and (3) the restocking and recolonization of the main prey of the wolf, the wild ungulates.

Following the recolonization of the Appennines and partly of the Alps, the wolf also returned in some hills, grassland areas, and near large cities. The reappearance of the wolf can lead to conflict with humans, including with livestock and hunting activities, and it can bring back ancestral fears in people, despite the current scientific knowledge.

The above scenario is epitomized by the return of the wolf in natural areas around Rome. Since 2013, the Italian wolf recolonized the Oasi LIPU Castel di Guido and the surrounding natural areas of the Riserva Naturale Statale del Litorale Romano, on the western outskirts of Rome.

From 2013 to date, we have studied the process of the wolf recolonization, until the formation, in 2017, of the first breeding pack in the Municipality of Rome in the last century. The critical role of the coastal areas of Rome should be closely monitored in the near future. This area is rich in woods, refuge sites and wild prey, but it is also heavily populated by people. This territory presents highly suitable environmental variables, but also a high mortality risk, caused by anthropogenic factors (e.g., high infrastructure density and high rates of human activity).

Coexistence between wolves and people is possible, as shown in various contexts. Nevertheless, to aim for long-term coexistence it is necessary to effectively inform and communicate with local communities.

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Wolf, dog and Man: ethological aspects and interaction in new colonization contexts

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A study, carried on with a naturalistic method over a period of 5 years (2015-2019), on a heavily anthropized non protected area of about 100 $km^{2,}$ in the southwest of the city of Teramo, allowed to analyze a case of territorial overlap between a pack of apennine wolf (*Canis lupus italicus*) and another one of feral dog (*Canis familiaris*) considering behavioral dynamics, inter-specific interactions (with particular regard to the conflict for the use of territory and trophic sources) , inter-specific interactions with Man and fauna (domestic and wild species).

The peculiarities of the area of study, including the high degree of anthropization, the strong hunting pressure, the widespread phenomenon of canine vagantism / straying , have encouraged considerable changes on the normal natural balance and behavioral dynamics of predators and other animals, with serious repercussions also on the zootechnical sector and considerable damage from predation.

Feral dogs, born and raised in conditions of total detachment from the human being, showed behavioral dynamics and territory use very similar to those of wolves, even coming to predate wild animals. However, some substantial differences have been observed: within the pack, all adult females can potentially reproduce in two cycles a year giving birth to numerous litters (5 -11 puppies); in the wolf, instead, there is only one reproductive cycle a year, where only the leader female usually mates, producing 3-8-unit litters. Feral dogs, even if they behave like wild predators, can assume highly aggressive inter-specific attitudes towards Man while the wolf, despite having shown an increasing level of confidence in human activities, maintains an elusive attitude .

This study demonstrates how the anthropic pressure and the presence of numerous dogs on the territory are strongly impacting on the ethological dynamics of animals, proposing itself as a first step for further investigations of the phenomenon.

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The sea in danger: examples of monitoring programmes and evaluation of anthropogenic impacts in marine environment

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Marine ecosystem is affected by a strong pressure due to anthropogenic activities, causing habitat loss, pollution, reduction of resources, and physical risks for marine organisms linked to bycatch or collisions with boats.

The Mediterranean Sea represents a particularly sensitive ecosystems given its high biodiversity richness and high levels of human pressure. Cetaceans are considered good indicators of the health status of marine environment, and a wide legislative framework requires information about cetacean populations as well as the evaluation of the impacts related to human activities: these are key elements of conservation research projects, providing a better knowledge of their interactions and trends, and set a basis for future mitigation and management actions.

Accademia del Leviatano for example, promotes and realizes studies to improve conservation of marine mammals in the Mediterranean Sea. Since 2007 it joins the Fixed Line Transect Mediterranean Monitoring Network (ISPRA) for monitoring the seasonal presence and distribution of cetaceans and major risk factors. Based on systematic observations performed from ferries in different basins, the relationship between cetaceans and maritime traffic was investigated, and since 2013, also the distribution of marine litter, showing how anthropogenic pressure can influence cetaceans' distribution and likely, behaviour. This long-term monitoring highlighted areas where the combined effect of different risk factors can affect the regular presence of the species: for example in the Pelagos Sanctuary the highly productive waters where all cetacean species are attracted for feeding needs correspond with the high intensity of traffic and plastic pollution.

Other offshore activities (surveys, drilling) require the supervision of specialised operators (MMO, PAM) to limit their impact on marine fauna. Observers identify animals before/during/after the operations and suggest mitigation measures to apply following international guidelines.

These studies are necessary to evaluate activities and areas of major risk for marine species, and their changes over time, supporting the implementation of adaptative conservation measures.

1° Congresso di Etologia, Etica e Conservazione

Human and sea turtle coexistence: the case of the northern Adriatic Sea

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The shallow waters of the northern Adriatic Sea host one of the two main neritic feeding grounds for the endangered loggerhead sea turtles *Caretta caretta* (Linnaeus, 1758). This area represents a strategic fishing zone and an important tourism hotspot. However, the impact of fishing activities with high rates of bycatch, the lack of a sustainable coastal development and intensive recreational activities affected the habitats of the area. In this context, the balance between the exploitation and the conservation of natural resources has a key role towards the protection of the environmental and economic potential of this area.

Turtles of the Adriatic Organization (T.A.O.) is a non-profit environmental organization which aims to develop a conservation project to protect and gain insights into large marine vertebrates (i.e. sea turtles) in this area as well as promote more sustainable recreational activities. One of the main goal of T.A.O. is to demonstrate how the protection and enhancement of the environmental heritage create also benefits for many business activities such as tourism and fishery. To achieve such a goal it is necessary to promote the citizen science and improve environmental awareness by sharing the scientific knowledge, involving citizens into conservation actions and encouraging a sustainable urban development of the coast.

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1° premio miglior presentazione orale:
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Visitor's effect on the behavior and the endocrine response in a family group of siamang gibbons in a controlled environment

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Despite the improvements zoological structures have recently achieved in pursuing *ex situ* conservation, visitors' presence could have a relevant impact on animals' life quality. A number of researchers have evaluated visitors' effect on zoos' populations with discordant and species-specifics results. The aim of the present study is to evaluate visitors' effect on a siamangs' family group at Zoom Torino Park, focusing on behavioral aspects. This Southeast Asian primate, *S. syndactylus,* is currently classified as "Endangered" in the IUCN Red List. The subjects of the research were two adults, a male and a female, and their son. The research mainly focused on the comparison of the different behaviors displayed by the primates during opening and closing season. Behavioral observations were recorded and analyzed with BORIS software (according to the species ethogram) and supported by an adaptive endocrine response. For this purpose, cortisol concentrations were derived from saliva samples, collected through a non-invasive method. Cortisol levels were determined by enzyme-linked immunosorbent assay (EIA), multi species kit: Cortisol EIA DetectX Kit. Cortisol levels were analyzed with visitors' flow and medium daily temperatures. The results showed a positive correlation between visitors' flow and time spent by primates in Playing and Feeding activities. These observations were supported by a positive correlation between cortisol levels and visitors' flow. Only juvenile male's cortisol levels were significantly lower during closing season. The results might indicate a match between cortisol levels and visitors' flow, while increasing positive interactions during the opening season seem to suggest that visitors' presence could be an environmental enrichment. In conclusion, the siamangs' group behavior seems to be scarcely influenced by the visitors' effect. More studies are required, involving different zoological structures, in order to confirm the results of the present research.

1° Congresso di Etologia, Etica e Conservazione

Asiatic lions behaviour and personality (*Panthera leo persica*)

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Studying personality in captive animals may enable the development of individual-based management decisions, which may improve animal welfare. Asiatic lions at London Zoo represent an opportunity to research an understudied species' response to new environments since they have experienced social and physical changes, such as new enclosures and increased social interaction with humans. This project aimed to investigate the role of personality in behavioral responses to these changes. Lion personality questionnaires completed by keepers and direct focal animal observations were used to create personality profiles. Time budgets and enclosure use were determined and compared between control nights and event nights, and between the lions' previous enclosure and their new one. The results showed a lack of difference in time budget and enclosure use between control and social event nights, and the Spread of Participation Index values revealed the lions use their enclosures unevenly.

Personality profiles identified various traits that could assist with individual-based management decisions. As the first study to assess Asiatic lions personality, this research contributes to the creation of consistent and valid methodology for evaluating captive animal personality, that may improve husbandry and welfare protocols for individual lions, leading to the improved health and success of the species.

1° Congresso di Etologia, Etica e Conservazione

Selective social information use in solitary cavity nesting bees

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Animals make biologically important decisions in many unpredictable situations. Social information use is an advantageous strategy that permit to reduce individual risk on actively searching by observing the behaviour of others. Recent studies also suggest that species use information from heterospecifics species when the cost of competition does not outweigh the benefits of information use. While social information use is largely studied in social species, little is known about social information use by other non-social animals. Using an electronic monitoring device for field nesting sites, we tested whether solitary bees from the family Megachilidae (*Osmia sp.* and leafcutter bees) use information of earlier nesting bees (*Osmia bicornis*) for establishing nest. The information of nesting success was provided by using artificial nests (wooden blocks with a drilled hole covered by mud) that mimic the natural nest of earlier nesting *O. bicornis*. We manipulated the success of earlier nests by presenting a full covered entrance (successful nest) or with small holes (parasitized nest). A geometric symbol (circle or triangle) was painted around the entrance that could be linked to the success of nest. We positioned an adjacent empty nest near to the artificial referred ones (local information) and two distant equivalent nests differing by the type of symbol (social information), as nesting choices for later nesting bees. Results showed that many bees used (local enhancement strategy), but the majority of bees copy the symbol of experimentally manipulated nest to established nests by rejecting the nest with the symbol associated with parasitisation. Our conclusion is that using heterospecific information to increase individual success is a common strategy across social and non-social species as a consequences of niche overlap. Secondly, our electronic monitoring device might be a useful system for bees' conservation by monitoring the density and the number of solitary bees.

1° Congresso di Etologia, Etica e Conservazione

Do the alpine passerines confirm climate change?

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Climate change is underway and on the Alpine region it's changing the melting times of snow. This causes an important variation in the arrival times and in the altitudinal distribution of breeding areas of some alpine passeriformes species. The aim was to monitor the presence and the arrival times of two most common species of oscines passeriformes of the Alpine level: Water pipit (*Anthus spinoletta*) and Northern wheatear (*Oenanthe oenanthe*), in order to have a long-term standardized database. This project was carried out in the Gran Paradiso National Park in two valleys included in the boundaries of the Park, Valnontey and Valsavarenche, more specifically in the Lauson and Orvieille areas respectively. In these areas have been set up 54 linear transect, which respect the ecological characteristics of the altitudinal horizon of the birds. The overall linear development is 10,580 m with a floating "strip" of width of 100 m for each transect.

The first year (2015) of strip-transect analysis produced an estimate presence of 88 couples of Water pipit and 70 couples of Northern wheatear. The comparison between the linear densities in the two areas showed no significative differences for the Water pipit (t test for independent data; t= 0.8, df=52, P=0.422), instead showed a significative difference for the Northern wheatear, it means higher density in Lauson area compared to Orvieille area. Initial observation suggests that birds are shifting, over the years, the arrival time in the breeding areas.

Furthermore, reporting of some individuals in higher zones also in early breeding season proves that these passeriformes are suffering the influence of climate change. Therefore others data analysis are still ongoing; however this issue must be monitored carefully in the future to avoid consequences also on the global biodiversity of the area.

1° Congresso di Etologia, Etica e Conservazione

Study of innate preferences for some key features of the animated movement in the domestic chick (*Gallus gallus domesticus*)

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The motion of most animals is constrained by their bilaterally-symmetrical body-plan, and consequently tends to be aligned with their main body-axis. In fact, it has been demonstrated that adult humans attribute a greater degree of animacy to an object with the main body-axis parallel to the trajectory and which maintains this orientation even after a change of direction. The same preference was also observed in visually-naïve chicks (*Gallus gallus domesticus*), but it is not known whether the maintenance of angle-path consistency is sufficient to determine chicks' preferences when the main body-axis is not parallel to the trajectory. In the current study we wanted to investigate the effect of angle-path consistency on the spontaneous preferences for animate motion exhibited by visually-naïve chicks. Based on our findings we were unable to demonstrate a preference for this factor. However, we found an unexpected preference for *stimuli* referable to the motion pattern of the foot of a walking animal. On human adults only the feet-dots, presented with a vertical acceleration consistent with gravity direction, were sufficient to create biological motion and animacy perception (and the corresponding visual preference in newborn babies). Our findings in visually-naïve chicks supplied more evidence for the hypothesis that the visual system of vertebrates has evolved to automatically channelling attention toward animate objects. In the last experiment we focused on a cue of self-propulsion. The self-propulsion is a motion cue based on the presence of an internal energy source for the motion of animate entities. It has been demonstrated before that the presence of both direction changes and speed changes elicit the perception of animacy in visually-naïve chicks, but we don't know if the direction change can elicit this perception itself. Based on our findings we were unable to demonstrate that direction changes elicit chicks' preferences.

1° Congresso di Etologia, Etica e Conservazione

Strategies and ethics of shaping mountain ecosystems using domestic livestock

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Climate change, the abandonment of the mountain, and the evolution of agriculture in the Mediterranean area have led to drastic changes in the landscape mosaicism that characterized this particular mountain ecosystem. The generalized consequence observed is a trend towards the increase in forest cover and forest density – especially *Fagus sylvatica* and *Quercus ilex* – at the expense of open grasslands. We focused our research on these changes in the Southern Apennines, in particular on the Picentini and Cilento Mountains (Campania). We considered landscape changes in light of the effect of grazing by domestic livestock – which is currently the main way of use of the mountain, since agriculture has disappeared – to study how programmed grazing can become a tool for increasing diversity (at the landscape as well as at alpha diversity levels). We conducted preliminary landscape dynamics analysis, comparing grazed areas to the uncontrolled evolution of the abandoned mountain ecosystem. Our study system shows an increase in forest cover of at least 10% and a decrease in grassland areas in the past 60 years. Data on indicator species of abandonment, like the rock partridge (*Alectoris graeca*), demonstrates a decrease of suitable habitat, both quantitatively and qualitatively, for this bird species as well as for the whole bird community linked to its habitat. In contrast, opportunistic species, like the wild boar (*Sus scrofa*), take advantage of this dynamic. Finally, we started a grazing programme in collaboration with local cattle farmers who still practice traditional pastoralism and transhumance, aimed at driving the evolution of the landscape and counteracting biodiversity impoverishment. Ethical issues arise when we try to identify a "target" for the mountain landscape, one which is not influenced by our concept of wilderness. In which direction do we want to move the mountain ecosystem and how far, before human intervention tips the balance?

1° Congresso di Etologia, Etica e Conservazione

Monitoring changes in serum serotonin and behavioral observations in donkeys (*Equus asinus L.*) involved in Animal-Assisted Interventions: a preliminary study

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Studies on animal-asssisted interventions (AAIs) have shown that AAIs could benefit patients since animals could act as social facilitators which are able to increase motivation, mobility and interpersonal contact. Research on characteristics for selection of individual animals or to assess animal welfare during AAIs are limited. The aim of this study was to evaluate serum serotonin and behavioral characteristics of animals involved in donkey therapy (onotherapy) sessions. Six clinically healthy female donkeys were recruited in this study. Behavioral observations were made from 8 am to 8 pm for two consecutive days in order to compile an ethogram of diurnal activity. Subjects were monitored during work sessions of 30 minutes with a control group consisting of six healthy male adults. Each session was videotaped in order to score animal responses. Tactile and olfactory interactions between animal and patient, postural behaviors and intraspecific social interaction were evaluated and scored on a 4-point arbitrary scale (0 = low to 3= high). Blood sampling was performed via jugular venipuncture in the box at 11.00 (T1), at 12.00 (T2) the day before AAIs and immediately before session (11.00 T3) and 30 min after session (12.00 T4). The serum aliquots obtained from each sample were stored frozen at −20°C. Serotonin concentration was measured by enzyme-linked immunosorbent assay (ELISA) with a commercial kit. Differences between samples were analyzed by ANOVA with Bonferroni's Multiple Comparison Test. Serotonin levels increased at T4 compared to previous sampling in almost all subjects (5/6). One donkey, who showed lower serotonin, didn't increased levels after session and it scored poorly on the behavioral scale. It was considered not suitable for AAIs (results from evaluation of behavioral observation were low). These preliminary results suggest that individual aptitude for AAIs in donkeys should be tested by validated methods and that serum serotonin monitoring, could be useful to evaluate the emotional state of individual animals used in onotherapy. Measure of physiological indicators coupled with behavioral observation may help assess the animal reactions. Further research is necessary to assess the welfare of donkeys involved in AAIs.

1° Congresso di Etologia, Etica e Conservazione

Effect of human voice with and without human presence on the behaviour of shelter cats

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Environmental enrichment is a fundamental factor in the improvement of the welfare of shelter cats. Auditory enrichment comprising human vocal interaction could lead to reduced stress and fear of humans in cats. This study compares the behaviour of single-housed shelter cats in the presence of human voice alone and then combined with the presence of the human, to evaluate if the latter represents an added value to purely auditory enrichment. 27 single-housed shelter cats were observed in their enclosure during the playback of a human reading in two different conditions in a balanced design: presence and absence of a human with no direct physical contact. The behaviour of the cats was video-recorded for 10 minutes in each condition and analysed using a specific ethogram. The location of the cat inside the enclosure (e.g. in the front), the position (e.g., standing, moving, lying with the head down) and other behaviours (e.g., interact with audio speaker, door rubbing, door scratching, playing, resting/sleeping, hissing, meowing) were observed. We found significant differences in some behaviours between the two conditions. Only in presence of the human the cats showed door scratching and door rubbing ($p<0.05$), which might be interpreted as attention seeking. In the absence of the human, the cats tended to spend more time in the vertical dimension ($p=0.051$), where the hiding boxes were located. Since cats showed rubbing, an element of affiliative behaviour in cats but no agonistic behaviours (hissing) during the auditory enrichment in combination with human presence, the human might have represented a positive enrichment for shelter cats. Because humans are more prone to adopt a less fearful cat, which approaches the front of the cage, the presence of the human combined with the auditory enrichment might promote contact-seeking behaviours and may consequentially increase the adoption rate.

1° Congresso di Etologia, Etica e Conservazione

Behaviour of the Iberian wolf in captivity – impact of visitors and environmental education

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The interest in observing and understanding animal behaviour stems from man's need to get food and defend himself, but also by trying to understand human behaviour. Studying animal behaviour has been very important for species living in captivity, as in the case of the Iberian wolf, *Canis lupus signatus* (Cabrera, 1907), for which there are few studies in this area. This work aims to understand to what extent the human presence may affect wolf's behaviour and to get to know the visitor's attitude regarding the existence and conservation of the Iberian wolf, before and after the guided visit. Regarding the first task, statistic tests were applied in order to compare the wolf's behaviour in the presence and absence of visitors, as well as trying to understand whether this behaviour is conditioned by one of the ecological variables (period of the day, food availability and temperature) or any variable related to the visit (number or gender of visitors). It was verified that the presence of the visitors has some impact on the wolf's behaviour, but it is not sufficiently significative to harm the animal's welfare, originating less than 10% of their behaviour variation. Regarding the second task it was intended to evaluate the learning of the visitors during a guided visit, as well as their perception on the importance of conserving a predator species like the wolf. The visitors were considered by age groups (adults, youngsters and children) with the objective of understanding if there were differences among groups. People generally learnt with the visit and regarding the age groups there were significative differences, analysed thanks to a test of multiple comparison. This study reveals not only the importance of environmental education, but also the high welfare provided to the wolves by the CRLI.

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Learning from starfish: arm regeneration in *Echinaster sepositus* juveniles

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Starfish are among the most familiar animals and the red starfish *Echinaster sepositus* is one of the most representative in the Mediterranean Sea. Besides their ecological importance, starfish are known for their amazing ability to regenerate all tissues after traumatic or autoinduced amputations. In vertebrates, regenerative capacities are limited to few species and are usually higher in early life cycle stages than in adults. Studying regeneration in animals with a high regenerative competence may help us to learn more about this process, also in a regenerative medicine perspective.

The aim of this project was to describe the post-traumatic process of arm regeneration in the juvenile stage of *Echinaster sepositus* and compare it with that of adults, in terms of regeneration rate and cellular/tissue patterning. To achieve this goal a combination of different microscopy techniques were used, including both light and scanning electron microscopy. 72 hours post amputation (p.a.), 3 and 6 weeks p.a. were selected as regenerative time-points of interest. At 72 hours p.a. the wound is perfectly healed, as in adults. At 3 weeks p.a. tissue regeneration the re-growth of arm terminal structures begins (distalization), again quite comparable to adult regeneration. At 6 weeks p.a. tissue differentiation continues but, differently from adults, intercalation of new structures, *i.e.* ossicles and podia, does not occur. Our results showed that arm regeneration in juveniles is apparently similar or slightly faster than in adults during the first stages (72h and 3w) but delays in later phases, reaching a plateau. This underline the relative independence of the regenerative mechanisms from animal/arm size and that differentiation of distal tissues prevails over new structure intercalation.

Overall, arm regeneration of *E. sepositus* juveniles can be considered an easy and valid model to study this fascinating phenomenon and hopefully in the future provide insights for regenerative medicine applications.

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Conservation and development of the Maremmana cattle breed: ethology, ecology and evolutionary processes

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The Maremmana breed descends directly from the Aurochs, Bos primigenius primigenius, and as such is considered an Italian native breed: it is widespread in regions of Tuscany and Latium with 11.138 heads counted in the Herdbook. Animals have a shaded grey coat, horns are long, half-moon shaped in males and lyre-shaped in females. Thanks to their impressive structure this breed became part of the image of the habitat, helping to make the landscape unique. Selection has applied pressure towards resilience to environmental stressors and resistance to parasites and diseases: calves (born reddish to blend in with the forest, turning into grey around 3 months of age) are seldom treated against parasites. Cows like to pasture grass but also browse woods, shrubs and leaves, enjoying autumn acorns. Such acorns are low in nutritional value but high in tannins: the large amount of astringent and cellulose tannic substances seem to balance the watery and laxative diet based on the late meadows. The early Autumn rainfall moisten and soften grass and shrubs lignin-rich, making them much more palatable. Acorn ingestion represents a timely “passive prevention” against internal parasites, which could be favoured by the fresh grass and leaves. Small amount of behavioural data is available on the semi-wild Maremmana breed. Thus we collected 14 measures of group behaviour on a free-ranged herd of 52 heads of Maremmana cattle at different times of the day for 6 months. The herd generally preferred to stay in woods and dense maquis, except in periods of hay consumption, remaining hidden in dense vegetation, mostly while grazing, standing, resting and ruminating. This preference corroborates the close link between woodland environment and the Maremmana breed. This bond must be well considered in the herd management, in order to maintain both ethical husbandry and a high level of animal well-being.

1° Congresso di Etologia, Etica e Conservazione

Impact of light pollution on *Caretta caretta* nesting: calibration of a brilliance measurement protocol

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Several studies report that artificial lighting near beaches is one of the main threats on land for *Caretta caretta* sea turtle. Observing that high levels of artificial light correspond to a low number of nests deposited in globally important nesting grounds, which is why it is very important to study the influence of light on adult females.

Our study was conducted along 40 km of the Calabrian Ionian coast (37°55'35"N 15°44'28"E - 38°06'08"N 16°09'27"E), from 2016 to 2018, during nesting seasons. Tracks of visit, digging and nests on the beaches were found and recorded.

First, a map of the street lights visible from the beaches was used to determine the relationship between artificial light and the presence of the species in the three years. For the 2018 tracks, night-light measurements along six directions (zenith, left, right, towards the sea, the ground and inland) were taken, using a Sky Quality Meter® photometer.

Zenith brilliance is the mainly used direction in similar researches, but no significant relationship between this and the different tracks was found. By analysing correlation between pairs of brilliance directions, we assessed the most representative one to express the amount of light on beach. This was the inland brilliance, direction highly subject to variations in accordance with the darkness of the Calabrian coasts. At last, we used a Gamma-GLM to test the response of Loggerhead Turtles to changes in artificial light, but no significant effects on the adult females was recorded.

On the other hand, we cannot exclude that the observed variations could determine disorientation in hatchlings, posing further threats to the conservation of *Caretta caretta* and highlighting that future studies are needed. These results will help improving the conservation and protection of the nesting area and better understand the effects of artificial lighting on sea turtles.

1° Congresso di Etologia, Etica e Conservazione

Using rare breeds in Animal – Assisted Activities increases results: a way to save biodiversity

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In Europe, many indigenous local breeds of domestic species are at risk of extinction. The European Union encourages the conservation measures of the domestic varieties, also stimulating the growth of multi-functionality activities in agriculture, which includes all activities that increase the social role of the agricultural sector. The Animal Farm, social farm in Ladispoli (Rome, Italy), has developed a functional model, proposed in the present work, which consists in realizing Animal – Assisted Activities AAA for disabled people employng autochthonous rare domestic animals, encouraging their dissemination and preservation in Italy. In the Animal Farm, are raised domestic animals species belonging to rare breeds in danger of extinction. In particular are bred, among others, donkeys *Equus asinus* Linneo, 1758 of Sardinian and Ragusano breeds, domestic goats *Capra hircus* Linneo, 1758 of Girgentana breed, domestic chickens *Gallus gallus* Linneo, 1758 of Ancona, Paduan and Sicilian Buttercup breeds. The bred specimens are not used for food purposes. In the farm, from 2006, are realized rehabilitation workshops dedicated to people with disabilities (Animal – Assisted Activities AAA). The workshops are based on care activities for animals (for example feeding the animals, cleaning the corrals, grooming the donkeys, etc.); all activities are carried out in compliance with animal welfare and current regulations. During the activities were collected preliminary data on the positive effects of using endangered races in AAA laboratories. In the period between May 2014 and October 2018, weekly, were asked to participants in workshops which animals they wanted to take care, the choice was always between two date options, including ordinary farm animals and rare breeds. In the observation period there have been involved 73 different people and the 83% of participant have chosen to work with breeds at risk of extinction. During workshops, were collected the reactions and behaviors toward both typology of proposed animals and some important factors have emerged. The different color of rare poultry breeds enhances the creativity and stimulates the participants. Some animals inspire safety in participants for their morphological characteristics and reduced mobility; this animal behavior reduces stress of participants during activities and increases the pleasure of interacting with animals, reaching a fundamental goal for the success of the AAA activities. The experiments implemented within the AAA paths in the Animal Farm of Ladispoli (Rome, Italy) confirm the key role of animals as a facilitator in rehabilitation programs for the disabled and these information confirm and encourage the undertaken work. In conclusion, the proposed model, repeatable in other realities, allows the realization of animal - assisted activities using rare domestic breeds, preserving them from extinction.

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Human Impacts on wild felids (Puma concolor, Lynx rufus) evaluated through camera trapping

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The main purpose of this study was to bind ecology with the study of animal behaviour to help and improve wildlife conservation. Were analysed the data from 259 camera-traps situated in the San Francisco bay area, California, during three years (2015-2017), with the use of occupancy models, analysed with the software PRESENCE 12.24. Were evaluated the climatic (precipitations and temperatures), territorial variables (ruggedness, slope, aspect and elevation), the dominant type of the habitat nearby the camera-traps and the humans' indirect (length of the roads) and direct (presence and absence data) impacts that could have influenced the occupancy and detection of two species of wild felids listed in the IUCN Red List as Least Concern: the puma (*Puma concolor*) and the bobcat (*Lynx rufus*). Was also examined the interaction between the two species.

This study confirmed how helpful could be the use of camera-traps and occupancy models to study the presence and absence of elusive species such as wild felids and to understand the variables that influenced their occupancy and detectability. This work found out a negative influence of the roads' length on the occupancy of pumas and an interesting positive influence of human presence data on bobcats' detection, indicating that the bobcat is more adapted to the human presence than the puma. The result of neutral interaction between the two wild felids had a propensity of attraction (not significant) in some sites of the camera-traps, suggesting a possible effect of urbanization on the two species, maybe not able to avoid each other in urbanised landscapes, but this aspect need further investigations.
In conclusion, studies like this, dealing with charismatic species such as wild-felids, stimulate the public opinion and by doing this, concur to improve the conservation of all the wild species, threatened or not.

1° Congresso di Etologia, Etica e Conservazione

Behavioural assessment and effect of enrichment in a colony of *Macaca fascicularis* rescued from a lab

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Long-tailed macaques (*Macaca fascicularis*) are widely used as non-humane primate models for biomedical research. Macaques kept in captivity needs an environment that allows them to display the ethogram of their species, otherwise they can develop depression, aggressive behaviours and a general stress condition.

The aims of this preliminary study were to monitor the behaviour of a colony of 23 Long-tailed macaques, moved from a laboratory to the Rescue Center for Exotic Animals (Semproniano), and to test the effect of food enrichments, to improve the welfare condition.

The observations were made over two months and it was used a focal sampling. The sampling period was divided into two sessions: a control period without enrichment, and a period with feeding enrichment. Each period counted 690 minutes of observation. A paired Wilcoxon was performed to underline statistical differences of frequency and duration of behaviours between the two periods ($\alpha = p<0,05$).

The results showed that in control period the animals perform mostly ingestion (35,23%), affiliative (33,50%) and inactive behaviours (17,50%), whereas aggression and abnormal behaviours are rare. The introduction of food as enrichment did not change significantly the activity of the monkeys, even if it can be noticed a further decrease in both abnormal and aggression behaviours, and an increase of self-grooming.

The activity budget of the animals of the study and those reported in literature for wild macaques are similar, except for locomotion, which can be stimulate using environmental enrichments. The highest percentage of affiliative rather than aggressive behaviours probably is because the hierarchies of the colony are well established.

To conclude, it can be assumed that the rehabilitation of non-human primates previously housed in laboratories is possible and the use of an enrichment program help to reach a good welfare condition.

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Ex-situ Aldabra tortoises (*Geochelone gigantea*) sociality

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As other reptiles, literature on Aldabra giant tortoises' (*Geochelone gigantea*) behaviour and well-being is sparse and underrepresented (Burghardt, 2013; Spiezio, Leonardi and Regaiolli, 2017). The aim of this research was to assess Aldabra giant tortoises' sociality within a captive group housed at the Cornelle Zoological Park (BG) (five females and five males), using camera traps, direct observations and video recordings. An individual identification guide line and a detailed ethogram were created (Ruby and Niblick, 1994), integrating direct observations with existing literature (Grubb, 1971). Camera traps were set to take three pictures in motion activation mode over two periods: from September to October 2018 animals were allowed to choose between internal or external enclosure and from October to February 2019 they were hosted in a heated greenhouse. Cameras were located in order to cover areas used by tortoises to assess individual area use within internal and external enclosure. In addition, four weeks of direct observation were conducted (November and December) through scan sampling; results were compared with camera traps pictures for proximity of individual tortoises and behavioral assessment. Sociality and proximity were assessed through camera traps pictures, pictures taken once a week and during observations. A proximity matrix (1 or 0) was created noting for each observation picture which conspecific was present at each side of an animal (frontal, lateral and posterior proximity). Head contact with a conspecific (e.g. chin rest, head on) during observations was used to create an oriented graph analysis. Our results show a preference, in certain individuals, to rest in proximity to individual conspecifics and directing head towards them. Often this trend is reciprocal. Our results demonstrate the relevance of reptiles sociality and selective preference of certain conspecifics over others, offering an insight in this species' sociality useful to encourage further research and offer new prospects for husbandry and welfare improvements.

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Self-efficacy in horses: the case of intentional communication with Humans

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Communicative gestures are non-vocal bodily actions directed to a recipient, physically ineffective but whose meaning, shared in the social group, may influence the outcome of the recipient's action. Active informers produce gestures intentionally, by activating shared-attention mechanisms (such as gaze alternation) and by modulating their communicative efforts according to the receiver's attentional state. Intentional communication is considered a prerequisite for mind reading and a feature requiring a certain awareness of self-efficacy, one's belief in its own ability to reach a goal. We wanted to explore the ability of the horse to communicate intentionally with humans and thus to build a representation of its self-efficacy.

We tested the ability of 14 outdoor, herd-living domestic horses to communicate referentially with a human partner about the location of a desired target, a bucket of food out of reach, by alternating their gaze from the bucket to the partner. To test whether their communicative efforts responded to the six operational criteria that classify a gesture as intentional, we set four experimental conditions differing according to the attentional state and the presence of the human partner.

The results confirmed our predictions. The horses alternated gazes between the partner and the bucket and they did so most often when given the chance to establish eye contact with the partner; they used other attention-getting behaviours when communication appeared ineffective; they modulated their strategy according to the receiver's attentional state.

These results suggest horses can use intentional communication with humans and therefore entertain self-representations according to their ability to manipulate the receiver's behaviour. Self-efficacy may be built according both to this ability and to the emotional maturity of the subject. Each individual should be given the chance of building a satisfactory representation of its own efficacy through access to an environment able to be manipulated.

1° Congresso di Etologia, Etica e Conservazione

Better alone than in bad company: brown bear's social avoidance at feeding sites in southern Slovenia

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The habitat selection is a hierarchical process that requires trade-offs between the food acquisition and the necessity to avoid the predators. For the brown females bear with cubs, the foraging decision requires considering both the risk of human interactions and the infanticide males.

In the present study, we analysed how intraspecific predation risk affect the social behaviour of brown bears in the southern Slovenia, where the hunters maintain numerous artificial feeding sites to divert bears from the human settlements and for hunting.
Using different camera traps, we monitored eighteen different feeding sites, which were supplied interchangeably with corn and/or carrions of wild ungulates, over a period of 2 years.
All the recorded pictures were analysed to obtain information about the number and the sex (females with cubs, other) of bears using each feeding site.
We also provide additional information for each photo such us date and time of acquisition, the bait used (carrion and corn respect those with only corn) and the bear density around the considered feeding site (in a 1×1 km grid).
We analysed the relationship between the use of feeding sites by "female with cubs" or "others" and a set of independent variables, using generalized linear mixed models (GLMM). Specifically, we considered as independent variables (1) the time during the day, (2) the season,(3) the bait used, and (4) the bear local density.
Our results indicate, first of all, that the females bear with cubs are used to visit the feeding sites relatively more often during the daylight. Another important data suggests that, during the mating season, the feeding site are less attended by this category. Finally, from this study it can be point out that the carrion and corn feeding sites are frequent less often than the only corn feeding sites.
All observed patterns agree with predictions of sexually selected infanticide theory.
Contrary to our expectations, the local density of the bears apparently did not affect the relative use of feeding sites by females with cubs compared to other categories of bears. Our results provide evidences that females with cubs are adapting their use of feeding sites to avoid intraspecific predation risk. This result has several implications considering the monitoring and the management of the species.

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