Vulture News, the free-access online journal of VSG, has been edited by Campbell Murn for the past ten years, and it’s time for us to thank him for his great service over the years, as he bows out from the role, but not before the upcoming publication of the landmark output from the first official VSG workshop: “A practical guide to methods for attaching research devices to vultures and condors” – a major detailed review by global experts, drawing on very wide body of experience. This will be issue 78a within the coming days. We hope to follow this up with more on other topics such as wing-tagging and vultures perceived as predators, either as position statements or publications where the wider VSG membership can input. We also acknowledge Campbell’s help with establishing the VSG website, and hope he continues to support us, as well as providing initial support to his successor. We are delighted to announce and warmly welcome Louis Phipps who has agreed to take on the editorial role!

Another highly successful International Vulture Awareness Day (IVAD) despite the limitations of the pandemic, with many events moving online, and a bonus this year has been the free access for the next few weeks to 15 recent Bird Conservation International vulture articles for 8 weeks starting from IVAD, so our thanks to CUP for this important gesture, and please do quickly take advantage before it ceases!

VSG has signed a CMS letter to the Guinea Bissau government regarding the tragic poisoning incidents earlier this year (more in Africa round-up below): for high level issues like this, please do consider asking VSG to take such action to make a difference for vulture conservation. We are anticipating more such letters in the near future for other priority vulture conservation issues and there are also potential options to seek higher level IUCN and Species Survival Commission signatories where appropriate. Read on for the full updates from around the world…

IVAD 2020: 93 organisations registered their participation in International Vulture Awareness Day (IVAD) from 32 countries across 5 continents, with some organisations spanning multiple countries and continents. The country with the highest number of participant organisations was India, with 21, followed by USA, UK and South Africa. As usual, participants were from a broad range of organisations including conservation organisations, universities, nature reserves, state parks, wildlife parks, falconry centres and zoos. The range of IVAD activities was engaging and diverse as ever, and there was a major increase in often innovative virtual events, including online video presentations, live feeds, social media engagement, online auctions, online awareness campaigns and especially webinars. Others involved vulture viewing activities, vulture releases back to the wild, a vulture cartoon launch and major media engagement. We are aware that many more events went ahead that are not registered here, so although registered participation decreased from 2019, (137 organisations) we suspect this was a combination of Covid-19 disruption and unregistered events. More details of activities within the regional updates below.

Regional Round-ups

Africa Round-up: North Africa: Between June & Sept 2020, 26 Rüppell’s Vultures (RV) were wing tagged, 11 of which were also GPS/Argos-tagged by Morocco Dept Water and Forests & GREPOM/Birdlife Morocco, and within the species monitoring program for the Strait of Gibraltar. The GPS tagging...
was in collaboration with Moroccan Association for the Protection of Raptors (AMPR) and Emirates Center for Wildlife Propagation (ECWP). 3 of the RVs are already (late Sept) in southern Mauritanian, the rest still in Morocco. Links here & here to follow progress.

**West Africa:** The Guinea-Bissau disastrous mortality events (Newsletter 12) continued to cause major international concern, and belief-based use appears the main motivation – VSG helped draft and signed a letter of concern and offering substantial help, training etc, which was sent by CMS to the Guinea-Bissau Government, and a Science publication is due for publication on this any time now. An ongoing PhD in SW Nigeria by Stephen Awoyemi has investigated rituals of the Yoruba tribe in SW Nigeria which are clearly a major source of the demand for vulture parts in the country. Two species are used in rituals: ‘Igun’ (HV) and ‘Akala’ (RV). The study visited 23 traders’ shops for ~4 hrs each per day over the course of a week. Vulture parts recorded were all of HV & RV, mostly heads and whole carcasses, but 3 shops had live HVs. NCF continued engagement with the Nigerian Traditional Healers Association to help stem the demand for vulture parts in belief-based use. Over 160 traditional practitioners have been reached in Kano, Oyo and Ogun, all identified as hot spot cities. The work also engages the National Association of Nigerian Traditional Medicine (NANTM) to develop alternatives for such traditional use. BirdLife Africa also conducted a media campaign (via NCF and SCF) in Nigeria and Niger, aiming to stop illegal killing of vultures. There was also a series of trainings on plant-based alternatives to vultures held in Nigeria by NCF. In Feb, monitoring by SCF revealed 7 new EV breeding territories in Koutous Massif, Niger, increasing the known population size to 11 resident pairs.

**East Africa:** In Ethiopia HawkWatch International continues satellite tracking studies of HV, WBV, RV and LFV. Monthly vulture counts at six abattoirs are also undertaken in the vicinity of Addis Ababa. The Peregrine Fund’s (TPF) Coexistence Co-op Project in Kenya continued to respond as possible to a severe increase in carnivore conflict during the Covid-19 lockdown. In April, 8 vultures were poisoned alongside Tawny Eagles and a jackal. Training work has been on hold since March but restarted in Sept. Kenya Wildlife Service held their first ever IVAD event at Hell’s Gate NP involving TPF, Kenya Bird of Prey Trust and Nature Kenya. Nature Kenya is now working with Born Free & Mara Predator Conservation Programme to address retaliatory wildlife poisoning as a result of human wildlife conflict. In collaboration with WCS, N Carolina Zoo is continuing to monitor vulture movements in S Tanzania while poison response trainings have been on hold due to the pandemic. In July one possible vulture mortality in Rukwa GR. In Aug 4 new transmitters were deployed in the Ruaha-Katavi landscape. Vultures from Selous GR, (Nyerere NP) in recent month extensively using N Tanzania PAs. EWNHS provided equipment and utilities to two primary schools located in the core EV wintering area in Ethiopia, as a baseline to start an environmental-educational programme focused on vultures. In Djibouti, 7 adult EVs were fitted with satellite tags in Feb. None have migrated, and 6 appear to be territory holders. Two articles in Vulture News 77, reporting the Indian EV subspecies N. p. ginginianus in Djibouti and a literature review of resident EV in Africa.

**Southern Africa:** BirdLife Zimbabwe initiated nesting surveys in Gwayi Conservancy to inform plans for the establishment of a Vulture Safe Zone centred there. There was an important paper reviewing home-range and habitat selection of captive-bred Cape Vulture in southern Africa. Raptors Botswana, with the Moremi Gorge Trust continue to provide bone fragments around a water point for CV breeding colonies at the gorge in the Tswapong Hills. Rochelle Mphetlhe has completed more than 10,000km of road surveys. Started an exciting project working with several private landowners across Botswana developing Vulture Safe areas on their properties. A newly formed group “Women for Conservation Botswana” empowering Botswana women in conservation includes a vulture agenda. Covid-19 limited community engagement activities but some activities continued. In South Africa, the EWT managed (despite Covid-19 restrictions) to train 456 rangers in wildlife poisoning response in Kruger NP, following a number of large poisoning incidents there since Jan. Aerial surveillance of vulture nests in the northern regions of the Park and also of Zululand was also carried out (working with Ezemvelo KZN Wildlife and Wildlife ACT) and the two significant breeding locations in Kruger NP were specifically assessed monitoring the impact of the poisoning events, for which results are pending. The previous management plan has been revised by the Bearded Vulture (BV) Recovery Programme (southern Africa): now a Recovery Strategy and Action Plan aligned with the CMS Vulture MsAP. Individual BVs tagged in 2010 & 2012 continue to provide movement data. A 3rd tracking device recovered from the field (dropped but no foul-play suspected) has been refitted to an adult male. One
fledgling was found dead in Lesotho after being killed by a shepherd. The “Bred 4 the Wild” BV breeding programme, still holds 9 individuals and no harvesting of second eggs took place during 2020. Limited nest monitoring of wild birds continues subject to Covid-19 travel restrictions. Based on current territory occupancy, estimates (between 92-112 pairs) and factoring in the number of trios in the population (n=4), the southern African BV estimate is min 188 breeding adults & 125 non-adult birds (max 228 breeding adults & 152 non-adults). The total is therefore between 313-380 individuals. Productivity based on data from 2010-2020 was recently calculated at 46% (0.46 fledglings/pair/year), lower than the 2000-2014 estimate of 55% (in Krüger & Amar 2017). Survival estimates have also been updated using tracking data since 2009 and at 83% are higher than the 75% previously calculated in 2014, possibly due to more years of survival data. See also www.projectvulture.org.za. A paper assesses BV release sites and strategy for South Africa and another paper reviews legal protection of all vultures in South Africa.

Finally three further papers: one contrasting vulture distributions inside and outside PAs of South Africa and Spain, another quantifies spatial distribution and trends of supplementary feeding sites to vulture energetics, and finally a fascinating review of perceptions and hidden risks of vulture feeding sites, of interest much more widely than the South Africa study area.

Asia Round-up:
An eagerly awaited paper updating the status of NSAIDs across South Asia from pharmacy survey results brought sobering news that diclofenac remains very much in use (some of this may be metabolised pro-drug aceclofenac which remains in legal use), especially across much of India and other drugs known to be toxic to vultures are also on the increase, despite meloxicam slowly growing in popularity. Covid-19 restrictions seriously hampered vulture work across all countries, most notably in India it delayed monitoring and release plans as well as seriously disrupting food supplies to all breeding centres, which led to a very challenging 3-4 weeks in April. Overdue road transects to reassess vulture population estimates could not be carried out and are delayed by a year. Cattle carcass NSAID-sampling, as well as most Vulture Safe Zone awareness activities were also shelved. India finally went ahead with its first release of 8 tagged White-rumped vultures (WRV) in Haryana, just very recently in Oct! Neighbouring countries suffered similar Covid-related constraints and issues although in Nepal, the earlier released vultures there finally chose this period (Mar-Apr) to disperse far more widely than before, with several birds (all are tagged) travelling over 100km, including some crossing into India. This also brought some increase in mortalities, but for those retrieved quickly the cause was not so far NSAIDs. Some excellent news was that the two recently tagged WRV in Cambodia continued to spend their time mainly in Laos, and trans-boundary follow-up in Apr resulted in the great news of rediscovery of a small WRV breeding population in Laos! In Myanmar survey work was largely completed before restrictions hit, but there has been subsequent slow-down in progress. Meanwhile the 10th Bangladesh National Vulture Recovery Committee met virtually in Aug, progressing plans for a national ketoprofen ban. A further meeting planned by Government, engaging 13 pharma companies and the national drugs administration has so far been postponed and will now be online later in 2020; meanwhile meloxicam is being actively promoted by government. Of 23 rescued Himalayan Griffons (HG) brought to the main Forest Dept Vulture Rescue Centre (VRC), 12 were rehabilitated and released whilst others were released immediately after short-term treatment. A wing-tagging training workshop scheduled for April with experts from SAVE and RSPB was postponed due to Covid-19. 500 dead cattle tissue samples (to test for NSAIDs) were shipped to ERI (Scotland) for analysis in Nov 2019, and 300 more collected since. Both the VRC and Vulture Feeding Station were badly damaged in Apr by a super cyclone but have now been largely rebuilt. A high level online IVAD event attended by the Bangladesh Env Minister and 3 MPs further reaffirmed plans for a national veterinary ketoprofen ban very soon. Elsewhere in Asia, India had the highest number of registered IVAD events globally, many of which were webinars, and a wonderful cartoon was produced by youths in Bangalore, and launched by musician Ricky Kej. Nepal also hosted many IVAD events summarised here by BCN, most notably a national vulture count was organised on 5th Sept. BCN also launched a photobook with superb images of all nine species, and held a Facebook campaign over that weekend with over a hundred participating. Myanmar Vulture Working Group hosted webinars and awareness campaigns, and in Pakistan, IUCN launched a Sindh survey report with online awareness work, well attended by senior Govt.
Protocols for wing-tagging were agreed within the SAVE network (South Asia), with the country colour code on the right wing - the system retains an individual letter/number codes for all birds, but encompasses the colour-code of dark green on right for Bangladesh, orange on right for India, yellow on right for Nepal, then a year colour-code on the left wing - suggesting red for the first year, i.e. 2020 if birds are tagged this year, but these will be confirmed later.

Interesting news from Yunnan Province, western China of a rescued Slender-billed Vulture on 4 Jul at 1350m in Jinggu County, the first confirmed record of the species in China outside Tibet, dispelling earlier uncertainty. The rehabilitated bird was also reported on China’s CCTV then fitted with a transmitter by Chinese Academy of Science experts and it continues to wander around China. There are at least 3 vulture rehabilitation facilities now in China, in Liaoning, Yunnan and Beijing. Over the past 3 years there have been at least 26 HGs taken into these rescue centres, mainly in Yunnan – also featuring on Chinese TV for IVAD, in some cases poisoned, some electrocuted, some had suffered hunting injuries. 23 of these have been successfully released back to the wild. Repeat transect surveys from the Qinghai-Tibet Plateau (compared with 1990 & 2010) have indicated declines of both HG and BV populations, suggesting that changes in livestock disposal and less waste food from restaurants may be resulting in food shortage.

West Asia: There has been progress towards a veterinary diclofenac ban in Oman and hopes of a formal announcement on this – which would be the second Middle East country (Iran is the other) to take this important step. EVs trapped in Jan 2018, are still being tracked in Oman. Two UAE EVs fitted with PTTs continue to transmit, one still in UAE and one now in Oman. Sadly, one Oman-tagged EV which had settled in southern Iran, was electrocuted. Despite difficulties resulting from Covid, Iranian colleagues quickly located the bird and recovered the tag, demonstrating that international cooperation is alive and well. EV work planned on Masirah Island, Oman was postponed due to Covid restrictions, however, as part of that project a public outreach poster and booklet about raptors in Oman (featuring information on EV & LFV) was published in Sept, and a high-profile online event with presentations carried out. Searches for breeding LFVs this spring located up to 20 territories. At least 5 of these produced eggs, 3+ produced chicks & 2+ fledged. There is some indication that persecution (shooting and nest destruction) may be active threats in some areas. In Turkey, DD published the Sarimazi Raptor Count 2019 results, with over 900 EVs passing through in just one month. Telemetry results helped to investigate the threats for the EVs - in Turkey electrocution and poisoning were confirmed, in Iraq direct persecution, and in Saudi Arabia electrocution and poisoning. Additionally, poison baits targeting feral dogs and other pests (e.g. crows) with Lannate and even Strycnhine was identified by NCE and SPNL as serious potential threats for EV and other migratory raptors in Egypt and Lebanon respectively. Field surveys to evaluate the impact of electrocution with hazardous powerlines were conducted in Egypt and Syria. Over 150 students and 11 teachers from 4 schools, took part in an awareness programme led by RSCN, dedicated to the conservation of vultures in Jordan. Due to COVID-19, the World Migratory Bird Day (WMBD) in Spring 2020, was celebrated mostly online by spreading conservation messages in social networks about migratory EVs, by DD in Turkey, SWA in Saudi Arabia and SSCW in Syria. Information signboards dedicated to the EV were installed by SPNL in five “hima” (traditional reserves), and hundreds of nature-lovers were informed about the status and threats for migratory vultures during the Raptor Count 2019 in Lebanon.

In Aug in Israel, an EV pair was viewable via remote nest camera, and the first successful fledging of an EV raised in the wild by captive born birds was recorded. The parents had hatched in incubators at the captive breeding centre at Hai Bar Carmel nature reserve in 2011 & 2014 and were released (on 23/01/2012 and 02/12/2014) using the method developed in Israel. The nesting took place on a cliff where EV had bred until the 1960s. In late June the annual summer GV count was conducted across Israel. All GV nesting and roosting sites are visited in the evening and/or early morning and also for 2 consecutive days there are counts and identification of tagged individuals at feeding sites. 132 tagged individuals were identified and altogether 206 individuals were counted (the highest count since 2009). On June 4th, a nesting female GV (K70 wing tag, GPS-lagger tagged) was found dead after colliding into 161 KV power lines. She had a chick (c.100 days old) in the nest at that time, in a nest with an online camera (as part of the project: “Israel Raptor Nest Cam” on Facebook). This enabled the monitoring of the condition of the chick and the amount of food supplied by the adult male (T99 black wing tag). Until its fledging at the age of 136 days, supplementary feeding was provided to the chick nearly twice a week by a military drone, but only after 2 consecutive days
European Round-up:

Bearded vultures (BV): Despite the lockdowns and travel restrictions, 22 BVs were released across Europe this spring, often involving transporting chicks across closed borders, or adapting captive-breeding operations to overcome restrictions imposed by the global pandemic. Techniques and protocols for breeding bearded vultures in captivity have evolved and are being used for conservation – see here for a great movie about the ins and outs of a captive breeding centre, and here for the importance of pair bonding. Or download the EEP annual report here. The magic of seeing a BV hatch is still special. But the occurrence of a West Nile virus outbreak raised some alarm too. The release season kicked-off in Andalusia, continued in Vercors & Baronnies (westernmost French alps), with birds also released in the Maestrazgo massif (Spain), the French massif Central/Grands Causses, and finished in Andalusia again. All these birds are doing well, except for one bird in Maestrazgo, killed by a Golden eagle! The annual report of the alpine reintroduction project is available here. Some renowned birds continue to enchant: ‘Adonis’, a BV that became well-known through two extended trips throughout Europe, is back in southern France, while some birds move across mountain ranges - like one from the Grands Causses moved to the Pyrenees. Others wandered to unusual parts of Europe, including northern France (a wild birds from the Alps), Portugal, and the second ever in the UK, where the bird attracted national attention. Several breeding pairs have nest cameras installed, that can be followed by the public, while in early October the International simultaneous BV count took place – giving a good estimate of absolute numbers of BV in several regions. Good news came from Picos de Europa (Spain), where a BV hatched for the first time since the reintroduction project started, whilst one breeding pair, west of the Pyrenees is the first for the central mountains of Iberia. A new total estimation was produced for the Pyrenees concluding there are 1000 individual BVs. And for Spain overall, the estimate is 126 pairs, according to the latest national census. In Italy a pair bred for the first time in the Piedmont. This is major improvement from times when BVs were heavily persecuted, and they were extinct in Italy - the low point for all of Europe was just 40 breeding pairs. Also, an interesting paper on nocturnal flights by BVs.

Egyptian vultures (EV) returned to Europe in early spring, and departed back to Africa. The sighting of one in South Africa was unusual – also some unusual counts from the migration bottleneck of Gibraltar. The results of the national EV census in Spain suggest the population there is stable. There was positive news that EV again bred in Sardinia – a recent recolonisation. A bird in France was rehabilitated and released, whilst in Portugal a young bird with severe fault bars underwent a feather transplant before being released. In Italy, further captive-bred EVs were released, with mixed success, while a pair nesting on an electricity pylon in Spain was a first. Wider EV breeding territory surveys for 2020 across the Balkans revealed a small increase in the Eastern Rhodopes and North-east Bulgaria, however, the overall decrease of the Balkan population continues, albeit at a lower rate. Ringing in Bulgaria identified a 12-year old wild bird.

SmartBirds - free application for mobile phones was launched in Albania to monitor the levels of threats for vultures and other biodiversity. The network of supplementary feeding stations in the Balkans is growing: Another vulture restaurant was built by HOS in W Greece, in addition to the existing feeding site in Meteora. The two supplementary feeding stations in southern Albania managed by PPNEA operated successfully in 2020, and one more was maintained by MES and the Aquila NGO in Northern Macedonia.

For the 8th consecutive year, a volunteer-based nest-guarding programme for EV was held by BSPB in Aug 2020 in Bulgaria. The reinforcement programme of the Balkan EV population, led by BSPB, tested delayed release, fostering and hacking in Bulgaria. This experimental work is largely supported by the captive breeding programme of EAZA EEP, coordinated by Prague Zoo with the involvement of Wildlife Rehabilitation and Breeding Centre of Green Balkans and Sofia Zoo. An ethnographic study of human perceptions about vultures in nine countries along the flyway of the EV was published by HOS. A video camera in a wild EV nest in Bulgaria is life-streaming for the 9th consecutive year. Two more live cameras are broadcasting online - one from the aviary for delayed release and hacking of EVs in Eastern Rhodopes, and a second one from the captive breeding facility for EVs of the Green Balkans in Stara Zagora. A joint awareness campaign to conserve the Vjosa River and the EVs inhabiting its valley started in Albania.
implemented by EcoAlbania, AOS and PPNEA. Environmental-education programme dedicated to EVs continues in Albania. The WMBD 2020 with focus on the conservation of the EV was celebrated in North Macedonia. Despite the difficult times, the campaign ‘A Mile for the Egyptian Vulture’ continues to support this amazing bird: two members of the ASPROPARIS team (created by WWF Greece) placed 5th in the international race “On the Traces of Heroes” in Greece.

The Cinereous Vulture (CV) population in Portugal, which recently recolonised from Spain increased to 35 pairs – see this short video. Birds from one new NE Portugal colony were tagged. Others previously tagged in Portugal wander extensively around Iberia, and one was seen over the Real Madrid football stadium! The reintroduction project in Bulgaria is also going well, with 10 individuals released in Vratchanski Balkan Nature Park - this is a new release site. Some birds have established stable pairs and birds were seen mating. One bird, ‘Riga’ returned to the Bulgarian mountains after wandering to the Alps, while another went all the way to Ukraine, where it eventually died. Some other reintroduced birds met their death too – one by electrocution, another one by shooting. A new batch of birds from Spanish rehabilitation centres was transported this summer to Bulgaria, ready to be released soon. In France the successful reintroduction project there also received a last batch of birds, while in Greece the only wild colony (35 pairs) remaining in the Balkans will hopefully be supplemented soon, by birds breeding in Bulgaria, but this is being closely monitored.

The Eurasian Griffon vulture (GV) population in Sardinia has increased significantly, from 130 individuals in 2013 to 250, with help from the LIFE Under Griffon wings project. There are hopes to replicate this on another Mediterranean island, Cyprus, where a new LIFE project is trying to recover the very small (20 individuals) population there – although one was recently hit by a car. The population in the Bulgarian Rhodopes is also increasing, as is the colony in NE Italy. In Armenia a census found about 50 breeding pairs. There was a worrying instance of disturbance by helicopters in Serbia. Food supply was supplemented in N Greece, showing positive effects, while a census of summering GVs in the Alps recorded an increasing population there. Also see a nice story of a fossilised griffon.

**Threats:** One significant success in Europe has been the EU’s decision to ban lead shot from all wetlands across the EU. This decision still needs to be ratified by the EU parliament, but comes after years of lobbying, and is a great precedent to the eventual ban of lead bullets from hunting activities in terrestrial habitats including mountains, which is now also under discussion by the EU, and is a must - because lead is a significant threat to European vultures, as this research paper established. Poison-baits continues to be the primary threat for vultures in Europe; To address this, there has been progress in Croatia, where a poison-bait case reached the court for the first time, and some related updates in Albania and in Greece. But poisoning cases have occurred in Serbia, in the Canary islands, affecting the island population of EVs there.

Publication of a comprehensive report about the poisoning situation in Spain over recent years. A key element needed to combat poisoning is having good sampling and analysis protocols – see here. The Antipoison Dogs unit annual report 2019 published in Greece (in Greek with English summary) recorded 29 poisoned carcasses from 26 patrols by HOS in Central Greece and 22 patrols by WWF Greece in Thrace. In Feb 2020, the local stakeholder antipoison network helped investigate a mass poisoning case (13 GVs) at the most important remaining GV colony in W Greece. Moreover, there was pilot testing of fladry fencing and foxlights as alternatives to poisoning to protect livestock from predators started in Greece. In Bulgaria, the Antipoison Road Map successfully went through a public consultation in May 2020 and was formally submitted by BSPB to the Min. Envt. & Water in Sept 2020. Additionally, field studies and explicit analyses on the publicly available information and the legislative status of the veterinary medical products (VMP) and pesticides dangerous for vultures were made in Bulgaria. An emblematic EV pair from the core population that was regularly used to foster captive-bred chicks was poisoned. Analyses of the legislative status of VMPs and pesticides were also conducted in Albania. Electrocution and collisions are also important threats in Europe. ‘Brinzola’, a Spanish CV, tagged by GREFA and released in the Burgos reintroduction project, made it to Norway, but ended its long journey when it collided with electric cables.

In Spain, electrocution is a common cause of mortality A new project in the Alps – Birdski – is dealing with this threat there, while a project for insulating poles in Bulgaria is great news. And some interesting new hope too that a study suggests that painting wind farm blades black could help birds avoid them. Wildlife rehabilitation centres are an important ally and stakeholder in vulture conservation projects, as vultures are
often found weakened or injured, and can be nursed back to nature – so efforts like here in Albania are positive. Tagging of vultures is invaluable in Europe as elsewhere - a powerful research and conservation tool was developed for determining movements, as well as eventual cause of death. GVs were tagged in Portugal, and some in Bulgaria migrated to Saudi Arabia, and some also tagged in Greece. CVs have also been tagged in Portugal, while all reintroduced BVs are tagged to monitor movements and survival. CVs and GVs tagging in Mallorca shows how they use the island for foraging. A video shows how a CV uses the landscape for energy efficient flight

Some efforts and progress to making vultures more mainstream – from children story books, to pub quizzes, even a cycling jersey! Finally some notable research papers include one on the behaviour of vultures at supplementary feeding sites, and another discussing animal carcasses and their importance for biodiversity. Also parenting behaviour of EVs, the value of research to drive vulture conservation, and one on the issue of vultures and alleged incidents with live cattle are relevant in Europe, the latter because in countries like France, farmers are asking for more drastic measures.

**North American Round-up:** A variety of new studies on the California condor are underway: Colorado State University is assessing home range in relation to potential wind energy development. San Diego Zoo Institute is partnering with the San Diego Zoo Institute for Conservation Research to look at lead and copper exposure as well as viability of coastal reintroduction. The US Geological Survey is looking at flight behaviour and range prediction and partnering with the National Park Service to investigate rodenticide exposure. Ventana Wildlife Society and field partners are studying occurrence of polyandry and polygyny, as well as release and recapture techniques. West Virginia University is looking at microtrash and wildfire risk. The North American Lead partnership is evaluating attitudes towards the use of non-lead ammunition.

**American Black Vulture** (ABV) livestock conflict issues are being investigated by a Southern Indiana team currently collaborating with Purdue University. Their research objectives include developing diagnostic criteria for vulture predation events, aiming to understand producer perceptions of conflicts, studying movement ecology, and testing mitigation strategies to reduce ABV predation risk on livestock. They plan to affix GSM transmitters to ABVs this fall. Researchers at Mississippi State University have recently initiated a project to explore the movement ecology of ABVs and Turkey Vultures (TVs) through mark-and-recapture and GPS technology. They aim to tag 35 vultures this year. Their research aims to provide understanding of vulture behaviour in the context of urban and agricultural systems and areas of human activity, focusing on movements of vultures relative to civilian and military aircraft. They will also investigate vulture life history and ecology using analyses of blood-lead concentrations and genetic analyses of microbial communities that exist on the surface of the birds. They intend to sample 100 vultures of various ages and both sexes, and 50 vultures to evaluate exogenous microbial communities. The project will also focus on resolving existing and anticipated human-wildlife conflicts relative to vulture activities within the study area. Since March, Hawk Mountain Sanctuary (HMS) has completed a second round on half of their range-wide vulture road survey routes. Preliminary results indicate stable or increased vulture numbers compared to 10 years ago. HMS monitored seven BV nests this breeding season; 5 in man-made structures and 2 in caves. Four of the five nests in man-made structures were successful and one of two cave nests were successful. Seven nestlings were trapped and patagial tagged. HMS continues to track 14 TVs and two ABVs fitted with satellite transmitters. Education materials targeting the general public are being created to teach landowners about BV behaviour and attractants. This document aims to improve understanding of BV behaviour, lessen conflicts between landowners and vultures, and reduce conflicts that result in vulture culls. The goal is that this education forward approach will mitigate legislation proposing the reduced protection for ABVs. West Virginia USDA Wildlife Services, WV Air National Guard, and Argos USA (a cement manufacturer) are currently working together to understand how ABVs respond to management efforts intended to reduce aircraft collisions. They have tagged several hundred ABVs in West Virginia, and affixed GPS-GSM transmitters on 10 vultures.

**South America Round-up:** The global IUCN classification for Andean condor (AC) has been re-evaluated with the preliminary proposal for the 2020 Red List to up-list to Vulnerable under Criteria A4cde; C2a(i). The final outcome will be published on the BirdLife and IUCN websites in Dec 2020/Jan 2021. Priority
areas for AC were determined to be mainly outside protected areas in a spatial prioritization study. Increasing numbers of AC have been observed in Santiago de Chile city, both at rubbish dumps and on buildings where people are provisioning. AC were also reported attending rubbish dumps in Argentina. One AC chick from Tatú Carreta Reserve in Córdoba province Argentina is due for release during the second semester of 2020. There are plans for capturing American black vultures (ABV) and ACs in Patagonia to evaluate veterinary drug residues in their blood (antibiotic and NSAIDs) as well as pathogen microorganisms (bacteria & viruses), the former has not been done previously in South America. Poison-baits were again responsible for a number of AC and vulture deaths across South American. New information on the conflict between farmers and scavengers in Patagonia suggest the potential impact of raptors (including vultures) on livestock is very low and only during the birth period. Moreover, simple solutions are available (e.g. guardian dogs, etc) and such information/awareness and sustainable farming is key to conservation programs for these species. Efforts are underway strongly discouraging circulating partial information or sensational videos or photos of exceptional vulture predation events, not systematically documented, which can readily go viral and promote negative perceptions. The Quito Municipality, Ecuador has started supporting research, conservation and environmental awareness campaigns in 2020 for key nesting and foraging areas for AC in northern Ecuador. This support for a joint project by Fundacion Condor Andino and The Peregrine Fund includes sterilization campaigns of domestic dogs, and population surveys of feral dogs competing for food with ACs - aiming to understand and reduce human-condor conflict and develop an effective conservation strategy for AC in Ecuador. Finally, a recent review of the role of vultures with respect to bacterial, viral and mycotic microorganisms, public health and ecosystems services has shown there is no clear evidence suggesting that vultures play no epidemiological role in spreading microorganisms or antibiotic resistance to humans or other species, and that they may prevent the spread of infectious diseases through the removal of decomposing organic material. However, the main conclusion is that this topic needs serious attention to elucidate this role as the data is insufficient, and this can potentially be key for bringing more serious and wider attention to vulture conservation generally.

Please let us know if you receive this newsletter indirectly and wish to be added to the circulation list. Do send items for inclusion ahead of the next edition in February. Or submit longer articles to the editor of the VSG journal, Vulture News. Vulture News including back copies is available free online – do read it!

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