

# ZHURAVL

*A Newsletter of Friends of Muraviovka Park – Issue # 23, February 2022*

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# MURAVIOVKA PARK ACTIVITIES IN 2021

*by Sergei and Elena Smirenski*

*Moscow State University and Muraviovka Park, Amur Region, Russia*

*Having a difficult and challenging year has always been a norm for the Park staff, but at this time, our hearts are saddened by too many tragic losses. In December, Sergei Rozhkov, the Park Bird Keeper, succumbed to brain cancer. We also lost our six captive Red-crowned Cranes – two in October 2021 (killed by a Siberian Weasel) and four in mid-January 2022 (died from smoke inhalation during a smoldering fire in their winter pen caused by an electrical failure). On the bright side, in early September 2021, Serge Ryndov, a young, highly qualified, educated, and motivated Research Coordinator (in the past one of the best Park's volunteers) joined our staff; and Evgeniy Pireyev and Andrei Fedichkin, two skilled handymen, replaced the late Mr. Rozhkov and began renovation works in our captive breeding facilities and headquarters. Since December, Sergei Smirenski has been working with our staff and local supporters on preparations for the 2022 field season (including crane and stork surveys with drones) and plans to renovate the captive breeding facilities and bring in new cranes for breeding. Quoting George Archibald, "If handled properly, great victories can arise from great tragedies," – especially since we have such amazing friends in Russia and all over the world!*

Two major factors shaped the situation at Muraviovka Park in 2021 – abundant precipitation for the third year in a row that exceeded the long-term average by 150%-200%, and the continued COVID-19 pandemic. In the spring, water covered vast areas of wet meadows in the lowland and numerous depressions among crop fields on the river terrace, creating excellent breeding conditions for waterbirds in the Park as well as preventing spread and reducing the power of grass fires – one of the major threats to nesting cranes.

The COVID-19 pandemic had its impact on people, wildlife, and our activities.

By March, we realized that the pandemic was not going away. Due to continued restrictions on travel and public gatherings, we canceled environmental camps, international visitors, and some of the planned field studies and public events.

Anastasia, the Deputy Director, and her husband Andrei came down with COVID-19 before vaccination became available and recovered at home for over a month. In summer, Andrei's company went out of business, so he is now helping the Park with site maintenance (Fig. 1). Fortunately, no one else among our staff and volunteers became ill with this virus.



*Fig.1. Anastasia and Andrei Fedichkin*

Sergei made two 3-month work trips to the Park in 2021 – one in April-July, another in September-November. In early September, Sergei arrived at the Park together with Serge Ryndov. In 2014, as a university student from Finland, Serge spent two summer months at the Park as one of our best volunteers.

He was also great with people and a wonderful young man altogether – brilliant, kind, hardworking, skillful in many trades including fixing and repairing things, very intelligent, and with great sense of humor. He graduated in 2021 from the University Jyvaskyla in Finland with a Master's degree in Zoology. Serge joined our staff as a Research Coordinator – a position we have been trying to fill for years. Since then, Serge has proven himself a huge asset to the Park. That was one of the best events of the year 2021!

Serge's family moved to Finland from Kaliningrad, Russia when he was a young boy. Serge found out about Muraviovka Park on the Internet, and in summer of 2014 became our volunteer. He did not sit around waiting for a project – he would go around the Park Headquarters, find jobs that had to be done, and get those done. Now 32, Serge has a M.S. degree in Biology and is fluent in Finnish, Russian and English languages.

Since then, we have been in frequent contacts with Serge via email, Skype, and phone (WhatsApp). In 2020, he told us that he always wanted to live and work in Russia and would like to take a position with Muraviovka Park if there was an opening. Sergei, of course, said Yes. They met in Moscow and flew together to the Amur Region in early September. Looks like the long-desired transition in the Park leadership may be now underway!

In early October, however, the Potekhin family (Education and Volunteer Coordinator Margarita and Site Manager Andrei) announced their move back to Khabarovsk City to raise their newborn son in better living conditions. Andrei, to our great disappointment, did not do much as the Site Manager during the year of his employment with the Park. So, instead of research, Serge had to participate in repairing the crane breeding facilities (Fig. 2)



*Fig.2. Serge Ryndov fixing crane pen netting*

and headquarters duplex and to coordinate volunteers. He also organized, together with Natalia Gromova (Vice Principal, Kuropatino High School), an outdoor Christmas tree decoration, with Kuropatino school students placing various food items for birds on a spruce tree at the Park (Fig. 3).



*Fig.3. Natalia Gromova (left) with her students*

Fortunately, on Natalia Gromova's advice, we hired Evgeniy Pireyev, a local construction worker and handyman, to take on the site maintenance tasks. Together, Serge Ryndov, Eugene, Anastasia and her husband Andrei made numerous repairs and improvements at the living quarters and captive birds' pens. The three men also have been taking turns serving as bird keepers.

## *Protecting Wildlife Habitats*

### *Fire suppression and prevention*

A wildfire entered the Park on April 22, presenting an imminent threat to crane nests

with eggs. Fortunately, the wind velocity was low, and the fire was moving slowly. We were able to start a controlled counter fire and stop the wildfire on the terrace slope, so it touched none of the Park facilities. Then we went down to the wetlands where the fire front moved even slower than on the terrace but was already almost two miles wide. In spring, the winds usually change their direction several times within one day, so we had to eliminate all burning spots, even the smallest ones.

Our four staff members heroically worked nonstop for six hours (Fig. 4). We would



*Fig. 4. Fighting April fire* not not be able to kill the fire using backpack fire extinguishers alone, but thanks to water that covered almost all the ground we could also effectively use fire flappers – mop handles with broad rubber flaps attached to the end. Our exhausted team returned to the Headquarters only by midnight, after extinguishing all burning spots. By the time the wind began changing its direction, the rain started and put out the remaining smoldering spots. Only around 500 acres of wetlands burned, which is much less than the annual average, and we did not lose a single crane or stork nest!

No fires came to the Park in the fall, and in June-July water still covered large areas in the flood land. The prospects for crane and stork nesting in 2022 look quite favorable, but a lot will depend on our fire prevention efforts in the spring. In October 2021, our workers and volunteers (Fig. 5) mowed and raked



*Fig. 5. Volunteer Olga Chernobaeva*

grass in the wetland along the terrace to protect the buildings next spring.

## *Spring Hunt*

Although the Amur Region Government banned the spring hunt in 2020 due to the pandemic, in 2021 it was resumed. Weather and poor maintenance, however, converted gravel roads even on highland into impassable obstacles for driving (Fig. 6), and some village streets turned to canals accessible only by boats. During the three summer



*Fig. 6. Highway to the Park in June 2021*

months, the government shut down the highway between Blagoveshchensk and the Park, and we had to take a long detour (125 miles one way instead of usual 50 miles) to shop for groceries, fuel for vehicles, and crane food. On the other hand, that significantly reduced the presence of hunters near the Park.

## *Waterbirds*

In May, many already planted, and later flooded crop fields turned into safe and rich feeding habitats for waterbirds. Due to the early spring, waterbirds laid eggs earlier that the annual average date, and for the species that prefer to breed in lower areas nesting was affected by high levels of standing water. Heavy precipitation from March-May resulted in higher numbers of productive nests of cranes and Oriental Storks. Abundant

rains continued in July and August. At the same time, flooding made our ground surveys impossible, so we were extremely grateful to our partner Anton Sassin, a local researcher from the Amur Socio-ecological Union (SEU), who conducted surveys of cranes and storks in the Amur Region using a drone. In April and May, Anton conducted six drone surveys of breeding cranes and storks in Muraviovka Park and shared his data with us.

## Red-crowned Cranes

In 2021, three wild pairs successfully raised a total of five chicks; we also observed one territorial pair and from one to five summering immature birds. In October, in a harvested corn field near the southern border of the Park, we spotted a pre-migratory flock of 18 wild Red-crowned Cranes (including three families that bred at the Park and Quarter, our two-year-old crane who was captive-raised in our pen by his parents and released into the wild in May 2020) This group stayed there for about a month. Before departure south, there were 25 cranes. Two Red-crowned Cranes released by Khinganski State Nature Reserve came to the Park in October and stayed for ten days. They missed the crane gathering and crossed the Amur River to China alone. One of them stayed until early February in a cornfield in a mountain valley 40 miles south of the Park.

## White-naped Cranes

In 2021, drone surveys (See Anton Sasin's article on page 16) showed that numbers of WNC territorial pairs in the Park, as well as in the southern part of Zeya-Bureya Plain, had doubled compared to 2020, and one nest had three eggs instead of usual two (Fig. 7).



*Fig. 7. White-napped Crane nest with three eggs*

As in 2020, due to the high level of water in the wetlands, we could not conduct a ground survey and assess the breeding success, but we hope to do better in 2022 with the recent acquisition of our own drones. But there was another, and seemingly more important, reason for crane population growth: the COVID-19 pandemic made any travel inside China impossible for collectors of crane eggs and chicks. Besides, long-awaited pressure from the Chinese government on National Nature Reserves, which hold hundreds of captive cranes for commercial use, took away poachers' profit.

## Hooded Cranes

Estimated number of this species staging at the Park for about four weeks in the fall was at least a thousand in 2020 (there was no comprehensive survey in 2020). In 2021, we also could not conduct a proper survey, but there were fewer (~400) Hooded Cranes roosting in the Park wetlands, since the birds could safely stay every night in their feeding areas – crop fields covered with water. For example, in such fields at Razdol'noye village, Hooded Cranes fed and roosted together with White-naped, Eurasian, and Siberian Cranes.

## Siberian Cranes

In mid-May 2021, six Siberian Cranes stayed for three days in the Park with four Red-crowned Cranes.

## Eurasian Cranes

In the fall, we counted 15 cranes of this species in the Park.

## Oriental Storks

Frequent pouring rains in the second half of June led to further flooding of the southern and southwestern parts of the Park (Fig. 8 and 9).



*Fig.8. Flooding in June*



*Fig. 9. Satellite image of the June 2021 flooding*

A few our lakes, including Kapustikha Lake, were connected by streams with Giltchin River even before this flooding, resulting in fish from the Amur River coming into the Park's lakes and in abundance of amphibians and fish in the lakes and flooded wet meadows. So, it was not surprising that throughout the summer of 2021 we could watch storks feeding near their nests in different parts of the Park. According to Anton Sasin, 30 pairs raised chicks in the Park – twice as many as in 2020. Nesting success of this species, which may raise up to six chicks per pair, mainly depends on availability of nesting trees and food (fewer chicks are raised in dry years).

*Other Waterbirds.* Good water conditions resulted in significantly higher numbers of ducks, such as Falcated Duck, Spotted Bill Duck, Little Grebe, and White-winged Black Tern, which nested even in flooded parts of crop fields on the Amur River terrace. At the same time, nests built in early April were flooded and abandoned in late April – May. In late June, the Amur River flood waters drowned rodents and chicks of pheasants, who could not yet fly well.

## *Supporting the Wild Mainland Population of the Red-crowned Cranes*

We are very sorry to report that in late 2021 – early 2022, our program of captive breeding and releases of the Red-crowned Cranes into the wild had suffered a number of serious setbacks.

The spring and summer went very well. Our heroic Quarter (see ZHURAVL issue from March 2021) returned to the Park from Khanka Lake in March with working GPS tracker and in mid-June paired with a wild female. This two-year-old female was hanging out near the headquarters with a wild male crane, but our irresistible Quarter quickly won her over! In the fall, together with 25 wild Red-crowned Cranes, they migrated to winter grounds in Yancheng Nature Reserve, China. See Quarter's full story on page 17.

In early May, we released a one-year-old female Red-crowned Crane named Snowflake into the wild (Fig. 10). She was raised by her



*Fig. 10. Releasing Snowflake into the wild*

wonderful (and now lost) parents, Oka and Kivili. Before the release, we produced information boards about our program (Fig. 11) to support the western flock of the mainland population of




*Fig.11. Posters on crane releases*

the Red-crowned Crane and Quarter's adventures and installed those at the crane pens. About 40 guests came to the Park to watch the release, including officials from the Amur Directorate for Specially Protected Wildlife Areas and Tambovka District Administration, a local TV crew, and the Park's friends and supporters.

Snowflake's sibling Snowman was released only in early July due to his upper bill injury, which took us time to treat. (The siblings hatched during a heavy snowfall in early May 2020, hence the names.) Both birds were equipped with GPS tracking devices manufactured by a Lithuanian company Ornitrack. In October, the GPS data showed that these birds still have been staying at the same spot in 5 yards from a road, so we went over to check on them. Turned out that Snowman could not fly, so we captured him, did an X-ray (Fig. 12), and discovered inflammation in his sternum and right wing – most likely a result of a collision with a power line. A course of antibiotics saved the bird but because his injuries still debilitated him, we decided to keep Snowman in captivity and use him in our visitor education program and possibly for future breeding.

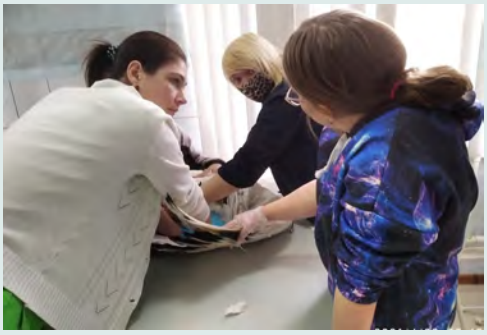


*Fig.12. Snowman's X-ray procedure*

In November, Snowflake joined the flock of Red-crowned Cranes, formed a pair with a wild



*Fig.13. Snowflake with a wild male*

male (Fig. 13), and migrated to Liaohe River in China. We are very grateful to the Amur Office for Specially Protected Wildlife Areas for timely providing all necessary permits to release our birds.

The Park's second captive pair of Red-crowned Cranes – three-year-old female Kanazawa, who came from the Oka Crane Breeding Center near Moscow, and our own three-year-old male May – have matured, bonded, and we were hoping they would begin breeding in 2022. Unfortunately, in October we suffered the first serious loss: one night, a Siberian Weasel *(Mustela sibirica)* found a hole in the metal mesh of their pen and killed both young birds. Right away we began repairs in the pens that were interrupted by several cold spells when air temperatures dropped below -20°F. Besides fixing the metal netting of the pens, we managed to add a layer of insulation covered with steel sheets to one wall (that faces the outdoor pen) of all winter pens, pour concrete around the foundation of winter pens, replace the electric wiring, and replace the sand litter in one outdoor pen. We will continue this work as soon as the weather allows to protect the pens from predators and rodents and reduce heating costs in winter. We also plan to complete the construction of a new outdoor pen for cranes in summer 2022.

The second tragedy struck in early December: our Bird Keeper Sergei Rozhkov passed away after a long fight with brain cancer (see a piece in his memory on page 21). We were fortunate to quickly find and hire Evgeniy to replace him.

The third tragic loss happened in February 2022. In May 2021, our captive pair of

Red-crowned Cranes, Kivili and Oka, once again raised two healthy chicks, who in October were as big as their parents. In early April, a new webcam was installed by the Amur SEU in their pen, which allowed people anywhere in the world watch the life of this family. We planned to separate the young birds in mid-February, before their parents would begin to demonstrate mating behavior, and release them into the wild in spring with GPS transmitters. Unfortunately, in the wee hours of January 18th, 2022, a smoldering fire began in their pen, and all four birds died from smoke inhalation. The fire most likely was caused by a sharp voltage increase (electric power in this part of the Amur Region is rather unstable) that overheated the electric contacts in the heater installed under the floor in all winter pens to create a warm spot for our birds. See also a story in memory of our amazing Kivili and Oka on page 13.

Fortunately, only one pen was seriously damaged, and it can be restored. Now we have only one Red-crowned Crane left—the almost two-year-old Snowman mentioned earlier. We hope to use him as a breeder after restoring the damaged winter pen, upgrading the entire electrical wiring in the Park's buildings and facilities, installing a modern Wi-Fi smoke alarm system, and bringing in new birds from other breeding centers to continue our captive breeding and release program.

Since 2005, after consultations with crane breeding experts (Rimma Andronova and Nadezhda Kuznetsova of the Rare Bird Reintroduction Station at Khingansky Nature Reserve, Tatiana Kashentseva of the Rare Crane Breeding Center at Oka Nature Reserve, and George Archibald of the International Crane Foundation) and with financial support from the Friends of Muraviovka Park and Fund Sofia (Blagoveshchensk, Amur Region), we have been building and expanding indoor and outdoor pens, learning and improving techniques of keeping, breeding, and releasing cranes into the wild. Our crane pens also became one of the most effective forms of ecological education of the Amurians.

The Park has been spending annually around $8,000 on food, vitamins, and medicines for captive cranes, heating the indoor pens, and Bird Keeper's salary. The cranes with which we launched our captive breeding program were donated by Oka and Khingansky Reserves. After Kivili and Oka began producing offspring, we, in our turn, donated some of them to Oka Reserve and Irkutsk Zoo Gallery and covered the shipping costs.

We hope that the Amur Region Government and organizations responsible for wildlife protection will provide help to the Park and participate in restoration and expansion of our captive breeding and release program, which will support preservation of the Red-crowned Cranes in the Amur Region.

## *Public Education and Awareness*

Due to the pandemic restrictions, we could not host any international or domestic camp sessions in 2021 or go out to schools with presentations. In June, because of daily rains, all roads in the area became practically impassable, so we did not expect good attendance at our annual Crane Dawns Fest. To our amazement, over 600 people from Blagoveshchensk, Tambovka and several other districts of the Amur Region came to the Park on 27 June (Fig. 14 and 15).





*Fig.14 and 15. Cranes Festival*

School children – participants of our summer environmental camps in earlier years – played an important role during the festival. Members of the local youth chess club gave a simultaneous game session and beat the adults in all rounds!

At this time, the pandemic prognosis for 2022 does not look any better, and restrictions on hosting overnight summer camp sessions for children will most likely remain the same. In this situation, we had to find another approach to continue our environmental summer schools. Together with relevant officials of the Tambovka District Administration, Amur Region, and Wisconsin teachers (alumni of our summer camps) we are currently developing a program for six-day environmental sessions of day camp for grades 1-5 students from rural schools located within a 25-mile radius of the Park (the students will be bussed to the Park from their village schools each day and bring their own brown bag lunches).

In December, the Park joined the ICF's North-East Asia Crane Flyway Education Project to collaborate remotely with other participants and connect communities of the key crane areas from Russia, China, and Mongolia through local activities linked to online events on joint education activities along East Asia Crane Flyway. Serge Ryndov coordinates this project for Muraviovka Park. On March 14, 2022, we planned to conduct an international Zoom conference dedicated to the World Rivers Day.

***Local Community Involvement***

Although volunteers from different districts of the Amur Region have been regularly coming to the Park for years to assist us with diverse tasks and projects, they have little communication among themselves. In June, a couple of our most active volunteers set up a special WhatsApp Group, "Muraviovka Park," through which they have been sharing the news from the Park, offering to share rides to the Park, and raising in-kind support for our activities. They are also maintaining an Instagram page https://www.instagram.com/muraviovkapark_28ru/ .

Our amazing volunteers kept coming to the Park even amidst the pandemic (see Helen's and Anna's articles on pages 19 and 20). Every week, we have hosted families and organized groups. Volunteers planted ~150 young trees and bushes, creating new ribbon groves that help slow down and often stop the grassfires; brought food for captive and wintering birds; purchased and shipped construction materials to the Park; helped with repairs in the duplex building (Fig. 16)



*Fig.16.Volunteer Anton Sassin making repairs in garage*

and captive breeding facilities (Fig. 17); renovated signage (Fig. 18); mowed grass to create firebreaks; planted trees and flowerbeds at the Park's Headquarters duplex and Education Center and a vegetable garden for the Park's staff. Oleg Zhilin (Fig. 19)



*Fig. 17. Yuri Shpak (bottom left), our volunteer for the last 15 years, working with new volunteers he recruited*



*Fig. 18. Ksenia Vyalaya, former camp participant*



*Fig.19. Volunteer Oleg Zhilin*

Director of the Botanical Gardens of the Far-eastern Branch of the Russian Academy of Science and his Deputy delivered over 500 seedlings of Ash and Linden trees, *Eleutherococcus* bushes, and Chinese lemongrass vines, which they planted in June to expand our arboretum. In the fall, local volunteers donated over one ton of pumpkins and zucchinis (Fig. 20 and 21), then, together with their children, cleaned and cut up the vegetables (Fig. 22), packed the chunks into plastic bags, and placed those in our big freezer (Fig. 23). Thanks to our friends, we got enough soft vegetable food for our captive birds to last through the winter.



*Fig.20.Donated veggies*



*Fig.21. Volunteer kids*



*Fig.22. Volunteer Elena Ivanova, Director of the Amur Region Natural History Museum, prepares soft food for cranes*



*Fig.23. Volunteer Marina Sosedova (hair stylist) puts clean and cut veggies in freezer*

One volunteer, Anna Novikova from the city of Blagoveshchensk, offered to organize our library stacks and in April 2021-February 2022 made at least 10 trips to the Park to electronically catalogue books and periodicals. Each time she brought along some of her friends and family, who also became our volunteers. See also Anna's piece on page 20.

In September, the members of the Muraviovka Park WhatsApp group expressed a desire and began making plans to reactivate the FOMP-Russia group (that has been dormant due to the pandemic), which would unite all supporters in Russia, in the Amur Region, and beyond.

Our staff, in their turn, gave all these helpers free tours of the Park (Fig. 24 and 25) to introduce them to its scenery and wildlife.

A short video clip about the Park inviting volunteers and potential staff was broadcast on May 30 by a central Russian Public TV channel and posted online, resulting in numerous inquiries from across Russia and beyond. George Archibald and Elena Smirenski's webinar through ICF about Muraviovka Park on May 27 attracted over 170 viewers and brought several new supporters to our program.



*Fig. 24. Nature tour for volunteers*



*Fig.25. Volunteer Lyubov Koneva exploring the unseen world*

The Far-Eastern Power Distribution Company, which in 2019 gave us a $9,000 grant to extend and upgrade out nature trail, surprised us with another unsolicited $3,000 grant that allowed us to replace the flooded old boardwalk to the lake (Fig. 26).

## *Plans for 2022*

In 2022, as the situation with the COVID-19 pandemic allows, we plan to conduct fire management and suppression activities, reforestation, crane and stork surveys; continue environmental education of local youth by conducting day summer camps (up to four 6-day sessions) for elementary school students; continue enhancing the Park's nature trail; repair and renovate winter pens for Red-crowned Cranes (to continue captive breeding and releases into the wild of one-year-old Red-crowned Cranes); and participate remotely in activities of the North-East Asia Crane Flyway Education Project.

Thanks to generous contributions of FOMP members, we already purchased two drones which will be used to watch over the wildfires that may approach the Park land and facilities and to conduct much more efficient surveys (than the ground surveys on foot) of migrating, breeding, and staging cranes and storks. Against all odds and with the help of our faithful supporters and volunteers, we hope for a successful year 2022!



*Fig.26. Construction of a boardwalk*

*Photo credits: Maxim Logunov, Anton Sassin, Sergei Smirenski.*

# The Magic of Muraviovka Park

*By George Archibald*
*Co-Founder, International Crane Foundation*

As the sun drops into China, a glorious sky above the dark greenery of the wetlands and groves of Muraviovka Park creates a splendid scene as one gazes west from a ridge, where trenches remind us that soldiers in 1940's watched enemies on the opposite bank of the Amur River, and where a small graveyard is final resting place for some, with a magnificent view. Pairs of Red-crowned Cranes and White-naped Cranes, widely separated on their huge wetland territories, rest with their young in the shallows, as do the families of Oriental White Storks on their huge stick nests in the trees. We watch flocks of White-naped and Hooded Cranes having recently flown in from nearby harvested fields to spend the night. And with luck one might also see vagrant Siberian, Eurasian, and Demoiselle Cranes.

This is the place that fascinated Sergei Smirenski when he began conducting his historic doctoral research on the distribution and ecology of cranes in the far-eastern Russia in the 1970s. Following the collapse of the USSR in 1990, this is where Sergei realized an opportunity to create the first non-governmentally managed, specially protected natural area



*Fig. 1. Sergei and George in Muraviovka Park*

in his country since 1917. He shared his dream with the local government and with colleagues at the International Crane Foundation and in Japan. For a mere $50,000 US, a fifty-year lease for 12,000 acres of wetland and cropland was signed. A Japanese textile company, Pop Group Co, Ltd., supported the lease. Then many foundations and individuals helped build the headquarters, stationary camp for kids, pens for captive birds, as well as run summer camps and other diverse activities. A few years later the Park's land was expanded to 16,000 acres and the lease was extended to the year 2058.

During the past three decades, I have had the privilege of often experiencing Muraviovka Park. Imagine acres of deep purple iris (Fig. 1), flocks of Whiskered and White-winged Black Terns skimming the water to catch small fish, a group of schoolchildren at summer camp learning about the wonders of nature, and flocks of vociferous cranes sharing their spirits.

Since the founding of the Park in 1994, Sergei and Elena have been its inspirational leaders backed by dedicated co-workers, volunteers, and many other supporters. The assistance of a Board of Muraviovka Park Directors, especially Eliza Klose, Jim Harris, Anatoliy Belonogov, Sergey Tkachenko, Tatiana Kholkina, Albina Voropaeva, Elena Zubakina, Barb Thompson and Sharon Hushek, have helped guide the growth of a project that is all-Russian but, especially in the early decades, depended on help from abroad.

Now Muraviovka Park, like a late-summer juvenile crane, has fledged. Sergei and Elena are hopeful that in due time the Director's duties will be passed to a new generation and Sergei will not have to oversee the Park's daily operations any longer. This would allow him and Elena to focus on inspirational leadership and fundraising, and to stay involved in the Park's life as co-founders as long as they live.

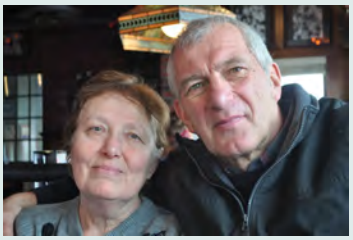


*Fig. 2. Sergei and Elena Smirenski. Photo by Jim Harris*

# Kivili and His Family

## *By Sergei and Elena Smirenski*

In mid-1970's, Red-crowned Cranes for the first time were found nesting in the Amur Region, from the Amur River lowlands in the south to the Selemdzha River basin in the north of Zeya-Bureya Plain. Since then the status of this species has constantly fluctuated, but not so much in response to fluctuations in climate and shifts in economic activities in the Amur Region, as due to reflecting the shrinkage and fragmentation of breeding, resting, and wintering habitats south of the Amur River. Brief increase in the species' numbers in late 1900's – early 2000's, when up to 15 pairs bred at Muraviovka Park alone, was probably caused by the exodus of the cranes from the interfluve of Amur, Sungari and Ussuri rivers that was undergoing a large-scale land development. Since then, numbers of the Red-crowned Crane in its Western flock of mainland population have been declining, and in 2021 there were only 15 breeding pairs in the entire Amur Region. In recent decades, it became known that these cranes suffer not only from the habitat loss, but also from poisoning, captures for Nature Reserves, Zoos and private bird keepers, and collection of chicks and eggs in China. In 2019, only one pair nested in the Park, which represents one of the three remaining breeding areas in the Amur Region. Since Red-crowned Cranes have strong birthplace fidelity, if one of these areas is lost, they would not immediately move to this place from other areas and resume breeding. All this makes captive breeding of this species and release of parent-reared young cranes into the wild one of the most important tools to support the shrinking wild population.

Successful experience of the of Rare Bird Reintroduction Station at Khingansky Nature Reserve, established in 1991 by Vladimir and Rimma Andronov, demonstrated that captive-raised and released cranes in most cases successfully survive in the wild, form pairs with wild cranes, and breed in the area of their release. Rimma proposed to establish other centers for captive breeding and releases in the Amur Basin which would support the wild population until the time when most major threats have been mitigated and more habitats have been restored or created. Such efforts are quite costly and labor consuming but much less expensive and more feasible than trying to bring back a lost population. That is why in 2004 we began a similar program at Muraviovka Park.

Kivili, the male Red-crowned Crane hatched in 2004 in the Rare Bird Reintroduction Station of Khingansky Nature Reserve from an egg brought from the Houston Zoo. He was named, as all other cranes raised in the Station, after a river in the Amur Region. In 2005, he was released into the wild. Curiosity is not a vice, but it often comes at a cost to those who stick their nose everywhere. Kivili jabbed his beak into a broken fragment of a plastic pen, the fragment stuck, and the beak began to rot. The crane could not eat and came back to people for help; he recovered but not to the point when he could take another chance to survive in the wild on his own. Soon the Station donated this crane to Muraviovka Park. At three years of age, Kivili became a large and remarkably beautiful bird (Fig. 1).

The Park's visitors could not take their eyes off him during our presentations about cranes and their conservation.

His handsome appearance and booming voice lured even the wild cranes to his pen.



*Fig.1. Kivili*

One wild female stayed near the pen for two summers, but without special government permits we could not release Kivili or catch the wild crane to form a pair. Kivili demonstrated a domineering attitude toward our staff who looked after him, so to avoid getting hurt they soon learned to remember who was the master of the pen!

In September 2007, our colleagues from the Crane Breeding Center at Oka Federal Nature Reserve (located six time zones west from of the Amur Region) shipped by an Aeroflot flight a crate with a gift – a one-year-old Red-crowned Crane female. Her breeders gave her a name Shizuoka after a city in Japan, but since it came from Oka Reserve, we shorten her name to Oka.

Cranes are very territorial birds who jealously guard their "property," even from a newcomer of an opposite sex. During their first encounter, the "host" crane could injure, or even kill the "intruder." So, for the first several weeks, sometime months, a male and a female are placed in separate next-door pens where they can see and hear but not hurt each other. At that time, we did not have an extra pen, so we divided the pen by a fish net.

As soon as Oka was released into her section of the pen, she ran to Kivili, who showed no interest in his neighbor. Oka, however, who grew up in company with other cranes, continued her advances and finally found a hole to sneak into Kivili's section. She looked quite happy and followed in his steps, which annoyed Kivili, and he tried to show Oka that she is not a match for him, but without any aggression. After she forced her way into Kivili's section of the pen for the second time, we removed the net. She stepped away from him only for a few moments when we began throwing live fish in the pen. Oka forgot the hierarchy, ran fast, and grabbed the fish first. Kivili, of course, could not endure such audacity, grabbed Oka by the neck with his beak, and pulled her away from the food. But he did not try to peck the girl, and as soon as she dropped the fish, he released her neck, and Oka immediately tried to catch another fish. Such scenes we watched again and again during the first year of their life together. It was obvious that the voice of the stomach was more important to Kivili than chivalry.

More than a year has passed, and our cranes stayed as pen mates tolerant to each other. Oka followed Kivili but he continued ignoring her. The situation completely changed as soon as we put in the next pen a golden eagle, who experienced an electroshock after colliding with a power line. The cranes became excited, uttered loud alarm calls, and walked with "parade" (goose) steps raising stiff legs high. Such behavior is typical when cranes demonstrate the borders of their territory to intruders. We were very pleased to watch that the new neighbor had united them, and they began behaving as a team.

Since that moment, the attitude of these cranes to each other began to evolve. A year later, when both birds reached maturity, they began making unison calls but were suspicious about grass that we offered for nest construction. That summer was very hot, without rains for weeks. Trying to relieve the birds, we poured water through the hose. When the water began covering the ground, both birds became extremely excited and concerned. Oka literally

dropped down on a heap of reeds and began picking stalks of grass to protect the "nest" from flood. Kivili began carrying grass to Oka from other parts of the pen. That was the first time when our birds demonstrated nesting behavior (Fig. 2).



*Fig. 2. Kivili and Oka*

Since then, they became a real pair, but only in 2011 they laid their first two eggs. And their behavior changed again. Oka, who was very friendly to people, would become enraged and rush towards anyone who came close to the pen. As to Kivili, it took two workers to place food and fresh water into their pen: one would distract him at one side of the pen, while another would run in at an opposite side with food and water and jump out before Kivili could cross the pen. Even a broom on top of a long stick did not guarantee safety, and as soon as we shut the door behind, we could hear heavy knocks until we were a fair distance from pen.

After one chick hatched, Oka continued to incubate another egg for a couple of days, which, as common for young breeders, turned out infertile.

At this time, parents became even more intolerant to anybody who could represent any imaginable problem for the chick. We named the chick Tamaki Jr. in honor of crane researcher and the Park's volunteer Tamaki Kitagawa.

The appearance of the baby produced a change in Kivili's behavior. Now he never ate until the chick was full



*Fig. 3. Kivili with Lily, one of his two last offspring in 2021*

(Fig. 3) but continued to ignore Oka. Next spring, we released Tamaki Jr. into the wild at Khinganski Nature Reserve, and that day Kivili changed his priorities again. He often picked the fish first, walked to a small pool, rinsed the fish in water and offered it to Oka. From an egotist macho man who thought only about filling his stomach, he turned into a caring spouse and father.

Next spring Kivili and Oka raised two new chicks and kept doing it for nine more years. Some of their offspring went to other crane breeding centers, while others were released into Muraviovka wetlands.

In 2020 and 2021, we were able to place GPS transmitters on three young cranes and track their migration.

Tragically, in January 2022 we lost this amazing couple – they died from smoke inhalation during a smoldering fire caused by an electrical problem in a heater. We all will miss Oka and Kivili, who brought so much joy to staff, volunteers, and visitors and faithfully provided young cranes to support the wild population. We have a huge task on our hands now, to restore and renovate the captive breeding facilities and to find new birds to replace our beloved Oka and Kivili.

# Numbers of Red-crowned and White-naped Cranes in Muraviovka Park and in the South of Zeya-Bureya Plain in 2021

*By Anton Sassin*
*Amur Socio-ecological Union, Blagoveshchensk, Amur Region, Russia*

From 3 May – 3 July 2021, we repeated aerial photo and video shoots of wetlands and arable lands in the South of the Zeya-Bureya Plain using the same technique and equipment as in 2020. We used a drone model DJI Mavic 2 Pro, which also collected data on geographic coordinates of birds and nests locations. During 32 days of surveys, we conducted 405 drone flights with a total length of 4,009 km (2,491 miles). As in 2020, we counted nests with eggs and/or chicks, nests with cranes without eggs and/or chicks, nests without cranes, pairs without chicks, single birds, and groups.

*White-naped Cranes*

The highest density of nests was documented in Muraviovka Wildlife Refuge (mostly in the territory of Muraviovka Park), where the surveys were conducted during six days between 6-22 May with the total length of drone flights 413 km (257 miles). In the wet meadows of the Amur River floodplain, we found 26 nests with eggs and chicks; one other pair stayed near their nest without eggs; 20 nests without eggs, chicks and adult birds; and four pairs without chicks. In 2021, we found twice as many nests as in 2020 (Fig. 1).

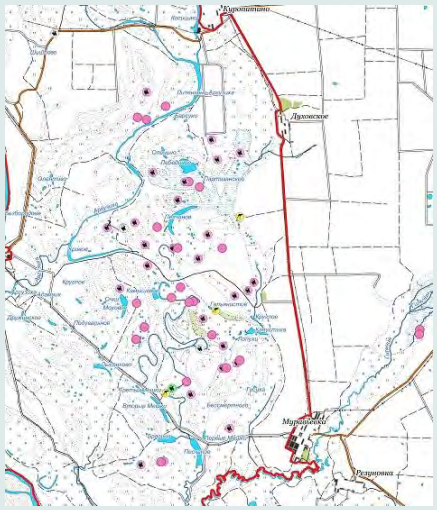


*Fig. 1. Map of White-naped Cranes' nests in the Park in 2021*

During one flight, we filmed a flock of 50 White-naped Cranes, and during another, a group of ten. Numerous but mostly empty nests of this species were found in flooded depressions amidst crop fields on the border of Tambovski and Oktyabrsky Districts.

*Red-crowned Cranes*

We found three nests with eggs and parents (later, with chicks) in Muraviovka Park (Fig. 2) and filmed four and then three cranes correspondingly during two drone flights.



*Fig. 2. Pair of Red-crowned Cranes near nest with a chick*

# Tracking Our Survivors

## *By Sergei Smirenski*

A year ago, it took Sergey Surmach's team two months of tireless efforts to capture Quarter in frozen land near the Pacific shore. Quarter is the Red-crowned Crane raised by his parents at Muraviovka Park and released into the Park's wetlands in May 2020 (see the article *Saving Quarter* in ZHURAVL issue of March 2021). Our colleagues in the Primorsky Region saved Quarter from the cold exposure and starvation, held him in a pen for six weeks, and in late March, when migratory Red-crowned Cranes arrived for staging, released him at Khanka Lake. We wondered if he would stay there, find a mate, and migrate to China in the fall. With the GPS device still working, we soon found out that the natal site fidelity led Quarter back to the same spot in Giltchin River flood land near Muraviovka Park border that he occupied last year (Fig. 1).



*Fig. 1. Quarter flying home*

In June, we spotted three Red-crowned Cranes, whose behavior was different from the families that nested in the Park. They were in constant movements, walking and running, sometimes flying, and sometimes demonstrating threatening postures. We were able to see a plastic ring and a transmitter on one bird's leg, and soon identified the transmitter that belonged to Quarter. The other two cranes were a wild adult male and a wild two-year-old female, who looked like a couple, but our irresistible Quarter decided to win her over. After about an hour of courtship and threat demonstrations and movements from one site to another, Quarter flew up high in the sky, and the wild female immediately followed him.

This newly formed pair stayed together in a spot in Giltchin River flood land picked by Quarter until November when they moved over to the Park. In mid-November, they joined a group of 18 wild Red-crowned Cranes who were feeding in a harvested cornfield near the southern border of the Park. Snowflake joined them a few days later, and within a week she formed a pair with a wild male. In late November, before the departure to winter grounds, there were 25 Red-crowned Cranes in this flock, including three families that nested in the Park in 2021, which Anton filmed with his drone (see https://www.youtu.be/DSdUhO6j1Sc). The flock began its migration south by flying to the Liaohe River mouth (Fig. 2),

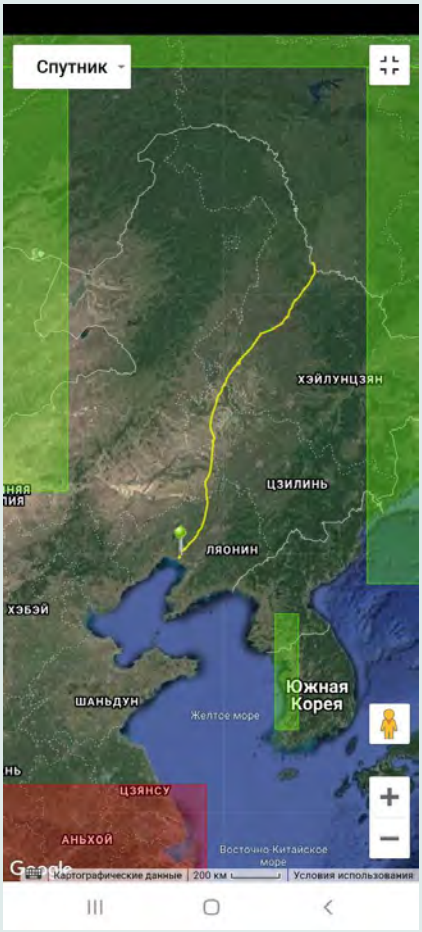



*Fig. 2. Map of Quarter and Snowflake's flight from the Park to Liaohe*

and in December moved to Yancheng National Nature Reserve (Fig. 3) – the main winter ground of the Red-crowned Cranes in China.

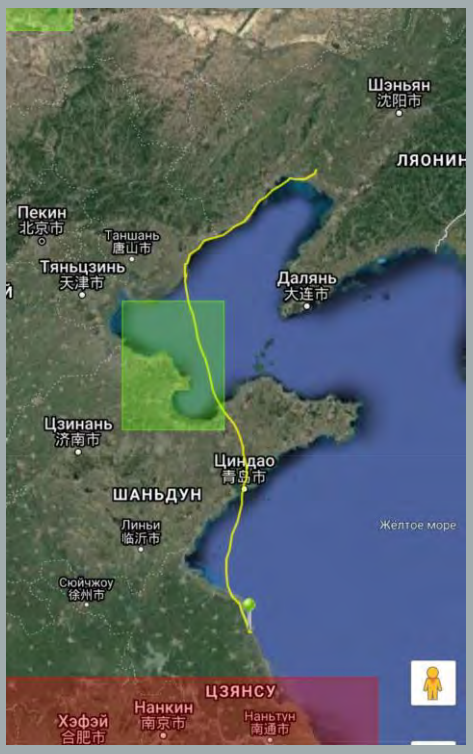



*Fig. 3. Map of Quarter's flight from Liaohe to Yancheng*

Two Red-crowned Cranes raised by staff of the Rare Bird Reintroduction Station and released in spring 2021 in Khingansky Nature Reserve also flew over to the Park but missed this flock and migrated south on their own.

Therefore, all efforts spent on Quarter's rescue had paid off, and we hope he will return to his birthplace this spring. Releases of birds raised in captivity by their parents is an important part of our program to support the wild population of Red-crowned Cranes, especially since the western mainland population has been in rapid decline.

Khingansky and Muraviovka Park experiences strongly suggest that young Red-crowned Cranes, raised by their parents in captivity and released, in most cases successfully adjust to independent life in the wild, but are not capable of migrating to favorable winter grounds unless they join wild birds with migration experience. Families with chicks at their nesting sites chase intruders away. At their feeding sites, families keep apart from other birds but are more tolerant to them.

Practically in all, although very few known cases, the young birds did not leave the area they chose after the release and used quite small territory, so their chances to mingle with other non-breeders were minimal. Whenever possible, the released birds try to follow flocks or families, which know where they are going. The history of tracking such birds is still very short, so we need more data on results of different captive breeding and release techniques.

It may be useful to try releasing one-year-old Red-crowned Cranes raised in captivity into groups of birds feeding in crop fields in spring during the first few days after their arrival from the winter grounds. Such groups usually include young non-breeders and adult birds who have lost their partners. Another interesting option would be to test releasing captive-raised cranes into pre-migratory flocks in the fall.

# Helping Aquatic Wildlife

*By Evgeniy Lisitsyn*
*Amur Socio-Ecological Union,*
*Blagoveshchensk, Russia*

In spring, after the ice is gone, hundreds of dead fish are often left on the shores and sand bars of small lakes in the Amur Region. In winter, the ice can be up to two meters (~7 feet) thick, blocking the sunlight, so the algae in the water under the ice stop producing oxygen and begin consuming it. Besides, in winter the mortality rate of algae and other aquatic organisms increases. Decaying processes also consume oxygen, and the fish begin dying from suffocation.

Aeration (saturating water with oxygen) is an efficient way to prevent such mass fish mortality. In recent winters, experts and volunteers from the Amur Socio-Ecological Union (Amur SEU) have been conducting aeration activities on the lakes of the Amur Region. On warmer days (when the air temperatures rise above 4ºF), they drill several holes in the ice and use a motor pump to bring water from one hole up to the ice surface, where it gets saturated with oxygen and flows back to the lake through other holes.

Muraviovka Park lakes are remnants of the old Amur River channels with a thick layer of sapropel sediment (dark-colored sediment rich in organic matter). Some parts of these lakes freeze all the way to the bottom, so by spring the free water volume drops significantly. That causes suffocation in Prussian Carp (*Carassius carassius*), Lake Minnows (*Phoxinus percnurus*), Weatherfish (*Misgurnus fossilis*), and Amur Sleeper (*Perccottus glenii*), which are an important food resource for the Oriental Storks, cranes and some other birds. In spring 2021, volunteers from the Amur SEU conducted aeration of several lakes in Muraviovka Park and plan to do it again this spring.

# Our Common Goal

*By Helen Kupriyashchenko*
*Muraviovka Park Volunteer,*
*Blagoveshchensk, Russia*

Back in my high school days, I participated in a short story contest. I got lucky–my story was recognized among the best, and I was awarded a seven-day trip on a steamboat to Khingansky Nature Reserve. At home, I still keep a small but cherished memento of that trip–the International Crane Foundation pin.

My history with Muraviovka Park began in 2013, when our group of bicycle tourists went there on a two-day trip. The road was hard and it was very hot, but we knew that at our destination a supper, rest, and, of course, the cranes were waiting for us. For the first time in my life I saw these graceful birds so close!

In the spring of 2021, on one of the social networks, my husband read an announcement inviting volunteers to Muraviovka Park. It did not take us long to ponder–we quickly got our stuff together and came to the Park with our 7-year-old twins (a boy and a girl) and my mother-in-law. During this trip, we met with extraordinary people united by a common goal–to preserve the Cranes. My life motto is that if you can help others, the help should be provided, so since then we have returned to the Park a number of times. Our children always look forward to the next visit with great anticipation and begin bugging us if we have not gone there for too long. In the Park, I always recharge my batteries and feel rested (Fig 1), even when we had to work really hard planting, watering, or weeding tree seedlings.

During such work trips and later at home, we volunteers get lots of ideas, proposals, and plans. So, I would be happy to return to the Park this year. One of my wishes is to spend two to three days at the Park without returning home every night!



# TO PRESERVE THIS BEAUTIFUL WILD PLACE

*By Anna Novikova*
*Muraviovka Park Volunteer, Blagoveshchensk, Amur Region, Russia*

I came to Muraviovka Park in April 2021, offered my help as a volunteer, and was asked to organize the library stacks. I found many books on ornithology, ecology, hunting management, history and nature of the Amur Region, encyclopedias, field guides to birds of Russia and East Asian countries, reference books, guides to outdoor ecology classes, dictionaries, photo albums. Some of the books were published as far back as the late 1800's.

The Park's library can benefit all who study nature. I made numerous visits to the Park in 2021 and early 2022 and created an electronic catalog that currently lists over 600 publications (Fig 1). I plan to complete this catalog by spring, after which I will begin to organize and place the books on the shelves according to their topic.

Besides working in the library, I also helped to feed the captive cranes. My friends and I like this place very much. The Park has a perfect combination of vast wet meadows in the Amur flood land—where the cranes hatch and raise their chicks—and crop fields on the river terrace where the cranes feed and gather strength for the long flight south in the fall. Last fall, the cranes stayed in the crop fields until late November, when a thick layer of snow covered the fields.

I was glad to see the arboretum, where the Park staff and volunteers planted numerous trees and bushes native for the Amur Region: Manchurian Nut, Linden, Ash, Bird Cherry, Amur Velvet Tree, Chinese Apple Tree, Mountain Ash, Daurian Rose, Hawthorn, Viburnum (Guelder Rose), pines, spruces, firs… The Park published the first field guide to trees and bushes of the south of the Amur Region with colorful pictures. These ribbon groves amidst the treeless Zeya-Bureya Plain attract many forest birds to the Park, which are very interesting to me, an amateur ornithologist.

On the other hand, I was surprised by the messiness and cold in the Headquarters duplex. This situation began to improve only in September, with the arrival of new employees. The repairs and renovation works are still in progress. Quite a lot was already fixed, but unfortunately a fire in the pen with a family of four Red-crowned Cranes caused by an electrical problem in the heater, killed the cranes and created new problems. That was the true tragedy for all who knew these birds.

At this difficult time, volunteers have been providing even more help than ever. I and my friends Marina Sosedova, Nadezhda Pakulova and others love the Park and will try to do everything we can to preserve this beautiful wildlife place.



# In memory of Sergey Rozhkov



*Fig. 1. Sergey Rozhkov releasing a crane into the Park wetlands*

Sometime late in the year, long after the wild cranes have migrated south, as the temperature plummets and the snow comes swirling in, Muraviovka Park can seem a lonely and isolated place. The Amur River, source of so much vitality in spring and summer, freezes over and local Russians in the region hunker down for the long winter. But the buildings at the Park headquarters remain warm, the pipes are unfrozen, and food and water for the captive cranes and other waterbirds is regularly replenished. That this happened over many winters was due to the dedication and care of one man.

Sergey Rozhkov (Fig. 1) joined Muraviovka Park as a laborer in 2014. Initially, he helped with chores in the woodshop, took care of the growing crops and assisted with cleaning and tidying the facilities. In 2015, he began taking care of captive Red-crowned Cranes and Swan Geese and their chicks.

Sergey liked birds, and he liked learning about them. He learned to take videos of both captive and wild birds, and the images he posted on Facebook became very popular among the public. Thanks to his filming, one new species, the Mute Swan (*Cygnus olor*), was added to the Bird List of the Park. Visitors enjoyed his stories about captive birds and appreciated his knowledge about local wildlife. Although he never graduated from high school, his nickname among those who knew him was the *junior researcher*. In recent years, Sergey was the only person living at the park during the cold winters.

In November 2021, Sergei was diagnosed with an aggressive brain tumor and succumbed to it in early December. Local friends of Muraviovka Park feel a huge loss, and in memory of Sergey they developed a video clip (see attachment) about the cranes he loved so much.

Spring will soon come again to Muraviovka Park, and the crisp air will echo with the calls of newly arrived cranes. Green shoots will appear among the brown stems of the reeds, and life will begin to bustle again around the park buildings. Sergey will not be part of that bustle in 2022 but memories of him will be forever there.

*Muraviovka Park Staff and Friends*

# Remembering Bobbi Miller
## *By Fred Koontz*



We lost an environmental champion last September: Bobbi June Miller, Wildlife Conservation Manager at Woodland Park Zoo, Seattle, Washington, passed away after a courageous battle with cancer. I had the privilege of working with Bobbi in the Wildlife Conservation Department managing a grants portfolio of wildlife projects, including supporting Muraviovka Park.

Growing up in Seattle in the 1960s, childhood visits to Woodland Park Zoo left her distressed—seeing sea lions living in a small, deteriorating pool. Bobbi vowed that someday she would help them. I think this early experience shaped her indefatigable devotion to assist good people working on behalf of wild animals.

After obtaining her college degree in communications, Bobbi spent 22 years in the music industry, including stints as a DJ, manager at Sub Pop Records, and buyer at Amazon Music. In the midst of this success, at age 42, Bobbi fulfilled her promise to those sea lions—and soon to be many other animals. In 2009, she was hired as an Administrative Assistant in the Woodland Park Zoo's Wildlife Conservation Department.

With her excellent communication skills, management experience, and love of animals, Bobbi soon began making an indelible difference at the Zoo. She believed that individual actions, no matter how small, were important. No surprise that Bobbi enthusiastically helped develop "Quarters for Conservation," a kiosk where each visitor votes for a zoo-supported project with a 25-cent token taken from the visitor's admission fee.

Bobbi believed in wildlife-friendly consumer choices. For example, she raised public awareness about palm oil and served on the international Roundtable on Sustainable Palm Oil. To promote recycling e-waste responsibly, Bobbi led the partnership with ECO-CELL, which invites the community to drop off handheld electronics at the zoo to help reduce the demand for Coltan, whose mining destroys critical habitat for western lowland gorillas. Proving it is never too late to learn something new, in 2012–2014, Bobbi obtained her Master of Arts in zoology, while working full-time and raising her beloved son, Nick.

Bobbi's education and experience in zoology and communication was most evident in her relationship-building and love for the zoo's diverse, international project leaders such as Muraviovka Park co-founders, Sergei and Elena Smirenski. She believed in every one of them, and unbeknown to most, she was their behind-the-scenes champion fighting for their grants and recognition. At meetings of zoo managers, I always saw those sea lions in Bobbi's eyes.

# In Memory of Anatoliy Koval

## *By Sergei Smirenski*



In the 1980's, Anatoliy Koval, a construction engineer by trade and graduate of the Leadership Academy at the USSR Supreme Council, was the head of the Svobodny City Communist Party Committee. *Perestroika* brought radical changes into his life. In 1989, he joined the Amur Region Committee on Nature Protection and was in charge of land and forest use and gold mining. In 1991, after the tragic death of the Committee Chairman Nikolay Nosovtsev, Anatoliy became its next leader. Under his leadership the Committee, as well as the Amur Region EcoFund led by Galina Redina and Lyudmila Ososova, provided important input to the programs of nature conservation and environmental education in the Amur Region.

Anatoliy clearly understood the negative impacts of unsustainable economic activities on nature, and actively supported a region-wide program of ongoing ecological education and public awareness. At that time, the Amur Region was one of two regions of Russia where ecology was taught as a mandatory subject in all grades (1st-11th) of public schools. The Committee and the EcoFund provided support to the international workshop, "Cranes and Storks of the Amur River Basin" (July 1992), the initial establishment of Muraviovka Park, and our first International Environmental Summer Schools. Anatoliy showed live interest in plans and activities of the Park and participated in our crane festivals and other public events.

We remember Anatoliy often, and especially every time we drive on the road from the highway to the Park, the construction of which he made possible. Rest in peace, dear friend.

# From Elena's Kitchen

**KISLYE SHCHI (SWEET & SOUR CABAGGE SOUP)**

Sweet and sour cabbage soup or *kislye shchi* is a traditional Russian soup. As with most dishes, the recipe varies from cook to cook and from region to region. I make this soup with fresh pork shoulder and pork spare ribs or neck bones. Those who don't eat pork can use chunks of beef or beef brisket and cracked beef marrow bones, or even chicken breast. My stomach does not like too much acid anymore, so I put in half of fresh cabbage and half sauerkraut.

*Ingredients*:

- 1 pound pork shoulder, trimmed and cut into chunks
- 1 pound pork spare ribs or neck bones
- 1 pound sauerkraut, rinsed and drained (or 1/2 pound each of sauerkraut and thinly shredded fresh cabbage)
- 8 cups water
- 1 large onion, chopped
- 1 large leek, cleaned and sliced, white and light green parts only
- 1 stalk of celery, chopped
- 1 large carrot, peeled and sliced
- 1 tablespoon unsalted butter
- 1 tablespoon all-purpose flour
- 1 large tomato, peeled, seeded, and diced (or a can of diced tomatoes)
- 1-2 bay leaves
- Black peppercorns, to taste
- 1 large potato, peeled and diced
- Two cloves of garlic, chopped
- Salt, to taste
- Freshly ground black pepper, to taste
- 2 tablespoons of honey
- Half lemon (optional)
- Sour cream, or heavy cream, for garnish
- Fresh dill and parsley for garnish

Rinse meat and pat dry. In a large saucepan or Dutch oven, place pieces of meat and bones, and sear lightly on all sides. Add the sauerkraut and water and bring to a boil. Skim off any foam that rises to the surface. Reduce heat, cover partially and simmer for 1 1/2 hours, adding more water, if necessary. (To save time, use your Hot Pot or a pressure cooker to make the broth.)

In a medium skillet, sauté onion, leek, celery, and carrot in 1 tablespoon butter or oil until translucent. Sprinkle with 1 tbsp. of flour; add garlic and tomatoes, 1 cup of the broth, bay leaf, and peppercorns. Bring to a boil, reduce heat, and simmer 5 minutes, whisking often to blend in the flour.

Transfer to the saucepan with the broth, meat, and sauerkraut. Add fresh cabbage and potatoes. Bring to a boil, reduce heat and simmer, covered, for 30 minutes. Add honey, salt and ground pepper to taste. If it is too sweet, add some lemon juice; if too sour – an extra tablespoon of honey. Serve with sour cream or heavy cream and chopped greens, if desired. Enjoy with dark rye bread!

# Help them Grow with Adopt-a-Nest!



Adopt-A Nest is a great way to help protect nest sites for Red-crowned Cranes, White-naped Cranes, Oriental White Storks and all the other species that rise their young at Muraviovka Park

For a minimum "adoption fee" of $50, those who adopt a nest (or receive it as a gift) will be acknowledged with a certificate and crane photo. The package comes complete with a one-year membership in the Friends of Muraviovka Park.

# Connect with FOMP

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Pick "Other" option and type "FOMP" below

Please return the following information with your check. Friends of Muraviovka Park Membership 2022

We hope you will renew your support of the Muraviovka Park in 2022, and if you already did, may consider an additional special gift. Please make your check payable to **International Crane Foundation or ICF** with FOMP on memo line and send to: ICF, P.O. Box 447, Baraboo, WI 53913.

Membership Renewal
(Membership 1/1 – 12/31/2022) Name _____

Address _____
City _____
State _____zip_____

Email_____

Member contributions are tax deductible as allowed by law.

Membership Levels:

____$15 Student

____$25 Individual

____$35 Family

____$50 School group

____$50 Adopt a Nest (includes membership)

____$100 Contributing
____$____to Special Project (please specify below)
_____

**Thank You!**

# *Thank you!*

***List of organizations we thank for their monetary support in 2021 (in ABC order):***
*Columbus Zoo (Ohio, USA), Far-eastern Power Distribution Network Co. (Blagoveshchensk, Amur Region, Russia), members of FOMP-USA, International Crane Foundation (Wisconsin, USA), Erica P. John Fund (Milwaukee, WI, USA), and Woodland Park Zoo (Seattle, USA).*

*Friends of Muraviovka Park invite you to the Zoom*

***Annual Meeting***
***Saturday, April 23, 2022***
***1:00-4:00 PM***

*Please join us to hear from Sergei and Elena Smirenski and the keynote speaker Spike Millington, ICF Vice President*

***Link to the ZOOM meeting will be emailed to all FOMP members several days prior***

***List of organizations we thank for their in-kind support in 2021 (in ABC order):***
*Blagoveshchensk Teachers' University (Amur Region), Amur Office of the Federal Service for Specially Protected Natural Areas of Russia (Blagoveshchensk, Russia), Friends of Muraviovka Park in USA, Russia and South Korea, Governments of Tambovka District (Amur Region, Russia), Moscow State University (MSU), Russian Union of Retired People (Tambovka District Chapter, Amur Region, Russia), Socio-ecological Union of the Amur Region (Blagoveshchensk, Russia), Tambovka District Women Association (Amur Region, Russia), and ~100 volunteers from the Amur Region and the city of Khabarovsk.*

*Dedicated to environmental protection, educational programming, ecological research, and sustainable agricultural development at Muraviovka Park and in the Amur River watershed of the Russian Far East.*

*FOMP is an affiliate of the International Crane Foundation*

**Connect with us on Facebook or visit www.muraviovkapark.ru**

Friends of Muraviovka Park
International Crane Foundation
E-11376 Shady Lane Road
P.O. Box 447
Baraboo, WI 53913