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ORTHODOX PERSPECTIVES ON ENDANGERED SPECIES AND CHRISTIAN RESPONSIBILITY

by Frederick Krueger
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The abuse by contemporary man of his privileged position in creation and of the Creator's order "to have dominion over the earth" (Genesis 1.28) has already led the world to the edge of apocalyptic self-destruction, either in the form of natural pollution, which is dangerous for all living beings, or in the form of the extinction of many species of the animal and plant world.

- HAH Ecumenical Patriarch Dimitrios

For humans to cause species to become extinct and to destroy the biological diversity of God's creation... these things are sins.

- HAH Ecumenical Patriarch Bartholomew

A good steward is careful to protect the things of his Master's house: he protects against destruction and decay. He would never permit pollution, rainforest burning, or the extinction of entire species.

- HE Metropolitan Nicholas of Amissos

SHOULD ORTHODOX CHRISTIANS BE CONCERNED ABOUT SAVING ENDANGERED ANIMAL SPECIES?

Critics sometimes claim that animals get in the way of progress and development, and if they die out, it does not really matter. There are thousands of other species. Is this an appropriate way for Christians to respond to this question?

What is a thoughtful, proper and respectful way for Orthodox Christians to understand the endangered species issue? As background, let us recall that North America was originally blessed with some of the world's most amazing and abundant wildlife. European settlers when they first visited this

continent, encountered broad-antlered Eastern elk and wood buffalo populating the forests of Appalachia; a huge golden grizzly bear, standing 11 foot tall was in the river valleys of California; and a unique desert-adapted jaguar roamed the Arizona desert.

On the coastal waters of the Pacific the Stellar sea cow-a large 35' relative of the Florida manatee-was hunted to extinction by Russian whalers because it was tame and easy to harpoon. Besides its flesh was uniquely tasty. On the Atlantic seaboard the sea mink and the grey whale are now gone.

In the skies, tens of millions of passenger pigeons filled the air over the eastern woodlands. Large flocks of colorful Carolina parakeets were in the forests, and the flightless great auk was on Atlantic islands. These creatures are all gone – extinct by the hand of a rapacious human society – as are many others, including the once massive schools of salmon and steelhead that crowded western rivers; the huge flocks of ducks and geese that filled the skyways and spectacular pods of whales that swam the oceans.

Pioneers saw this original abundance as evidence that God “shed His grace on Thee,” as the hymn ‘America, the Beautiful’ proclaims. They arrived at this conclusion because the Scriptures repeatedly teach a respect and care for the animals. This we read in many places across the Scriptures so that it becomes an inescapable conclusion for Christians. Here are several examples from Scripture.

The Witness of the Bible on Animals

When God created the animals, even before He created humanity, He gave them a divine mandate to multiply and fill the earth. They therefore have a command from God to continue their species. As humans we are to honor their responsibility to fulfill what God has commanded regarding the design of the world.

In the very first chapter of the Bible, God gives humans dominion over creation, including the animals. Dominion means that we are to treat God’s creation as the Lord would treat them (The English word ‘dominion’ derives from the Latin ‘dominus’ which means Lord, or to be as the Lord.) This implies love, care, and thoughtfulness as well as concern for the welfare and future of what God has placed into human care. It does not and never did mean a simplistic domination of the animals or the earth.

It is useful to observe that no interpretation of dominion as domination ever arose until the English politician and lawyer Francis Bacon proposed this heretical understanding as part of his formulation of the scientific method in *Novum Organum* around the year 1620. As a consequence, society becomes set onto a more materialistic world view in which God, humanity and nature are increasingly estranged from one another. This fosters a new individualism and enhanced disrespect for animals that continues even to this day.

Continuing after the command to take dominion, God instructs Adam to replenish the earth (Genesis 1:28). This modification of dominion means simply that humans are to put back what we take from the earth. Replenishment applies to the earth and everything in it, including the animals. We may

take from creation to live, but we must ensure the continued fruitfulness of the land and the species which dwell on it. The mass killing of the buffalo on the American plains or the extermination of the passenger pigeon disregarded this command to replenish the earth which by implication also means that we are to maintain its original fruitfulness.

In the next chapter of Genesis, God tells the first humans to “dress and keep” the creation. In the original Hebrew these are agricultural terms. “Avad” and “shamar,” commonly translated as preserving and protecting the earth and its life, must also include the life of animals. The concept of “Dress” or “preserve” are interpreted by St. Basil as a command to raise creation to its full cosmological potential. The archaic term “keep” or protect are meant to protect creation and its animals from pollution or corruption. When applied to endangered species, humans are to maintain what God has placed upon the earth, including all of its original biodiversity. This is because there is a balance between all of the animal species, that often soars beyond the grasp of human understanding.

A great example of the wisdom in the primordial balance in ecosystems is observed as wolves were reintroduced to Yellowstone National Park in Wyoming. Not a single wildlife biologist anticipated the cascade of benefits that wolves would contribute to the environment when they were returned to the park. For instance, no fish biologist anticipated that trout fishing would get a lot better. This happened because the elk without wolves would stand in the stream and browse on streamside foliage. With wolves present as an “apex predator,” meaning an animal at the top of the food chain, the elk would no longer stand in a vulnerable location to attack. Their behavior, like that of many other species, quickly changed. As a result tree branches became more abundant; shade increasingly covered the streams, more insects fell into the water, and trout become larger and more abundant. There is a critical lesson here. Every member of a biological community has an impact on all others. The reintroduction of wolves continues to astonish biologists as it created a spreading ripple of direct and indirect consequences throughout the ecosystem. The beaver population experienced a nine-fold increase in size. Eagles became more numerous. Even plants and grasses recovered because the great herds of elk became dispersed. Scientists are realizing that the reintroduction of wolves represents a trophic cascade of ecological change that is still restoring aspen groves, vegetation patterns, and stream flow and the end of these still spreading changes is still not yet in sight.

As the elk relocated themselves, beavers expanded in streams and built new dams and ponds. This had a beneficial effect on stream flow and hydrology. This evened out the seasonal pulses of runoff; the beaver dams stored more water which allowed for recharging the water table. This stabilized cold, shaded water for fish, and allowed for the robust growth of willow stands which provide habitat for songbirds.

Scientists could not predict all of these changes because human perception tends to proceed logically and linearly but the changes were primarily organic, circular and indirect. A key lesson in all this is that natural ecosystems are incredibly complex, and they soar beyond easy comprehension.

Another unanticipated lesson is that wolves proved to be food distributors. Instead of a boom and bust cycle of elk carrion availability, as existed before wolves returned and when winters were harder, there is now a more equitable distribution of carrion throughout winter and early spring.

Scavengers that once relied on winter-killed elk for food now depend on wolf-killed elk. That benefits ravens, eagles, magpies, coyotes and bears especially as the bears emerge hungry from hibernation.

Several verses later in Genesis God directs Adam to name the animals. This was not an arbitrary process. In Hebrew, each letter has meaning that relates back to the qualities in the nature of God. The naming of each animal required a deep discernment of each species' inner essences and an identification of those attributes within creatures that connect them back to their Creator. The ancient responsibility to name the creatures reminds us that humans are "priests of creation," charged by God with the care and keeping of the world, but also with an accountability for a right relationship between heaven and earth. Too often only our human responsibility for the earth is taught, but that is incomplete without inclusion of human responsibility to consecrate all the things of the earth back to God in thanksgiving. This is fundamental to the full exercise of our priestly stewardship of creation. We must conclude that the process of naming is important for the challenge of protecting endangered species because the Bible presumes a continuing awareness of the intricacy and wisdom embedded in the design of the world and an ability to discern the dynamics of humans, animals and the rest of creation functioning in harmony and synergy with one another.

At the time of the Flood, God commanded Noah to save each animal species. Notice in this story that God was more concerned about saving each species than He was about saving the sinful people. Yes! After the rains poured down, God allowed those people to drown who would not listen to God's voice through his prophet Noah, but He ensured that the animal species were all preserved. After the Flood God not only makes his covenant with Noah but also with all the animals aboard the ark. This covenant, or unilateral declaration by God, promises that as long as humans obey God, there will not again be another great flood. If God can make covenant with Noah and his descendants in perpetuity, including all of the animals on the ark, His acknowledgment of them all gathered together in this contractual declaration means that He intends for them to survive into the future. Here is another reason why humans should protect all animal species because God wills their survival, and we should not abrogate what God has intended by causing any species to be exterminated.

A similar teaching is found in the Torah, the five books of Moses. In Deuteronomy a passage commands protection of bird species. "If you come upon a bird's nest... and the hen is upon the young or the eggs, you shall not take the hen with the young" (Deut. 22:6-7). Here is an example of preserving the fruitfulness of creation as a religious ethic applied to birds. When this principle is relentlessly applied, it offers direction and guidance for restraint in the taking of animals and even the extraction of natural resources.

Saint John Chrysostom provides important perspective on the issue of animal protection when he writes that the saints are exceedingly loving and gentle to mankind, and even to the beasts.... "Surely we ought to show them great kindness and gentleness for many reasons, but, above all, because they are of the same origin as ourselves." (Homily XXXIX: 35, Commentary on Epistle to the Romans). This should remind us that we are all connected. The further implication of Saint John's insight is that we share one life from One Creator God. As we deal with the animals, we are also dealing with what God has created.

In the Psalms the inspired author, usually considered as King David, repeatedly presents images in which animals, plants, and trees coexist in a cosmic harmony. In Psalm 103 (104) we read a grand epic vision of peace on earth in which there are places appointed for the animals and the Lord oversees the whole creation with all of its parts integrated into a harmonious whole. The author then concludes “in wisdom hast thou made them all” (Ps. 103:24). Several essential lessons emerge from this sequence. As creation gives praise to God and exists in adequacy and sufficiency, not excess, this serves as a model for human behavior. The fact that creation is imbued with wisdom means that the order, balance, harmony, and beauty with which God has assembled the world should serve as the model and guide for how we humans are to structure and build society. The clear implication is that humans, as priests of creation, should make room for the animals and plants, and not allow their elimination. A further implication is that wisdom is essential for a integrated and harmonious world. Because wisdom is accessed only by theosis, spiritual striving is fundamental for each person. This allows us to live consciously connected to God’s wisdom and therefore to discern and foresee the consequences that our actions will have upon each other and the entirety of the biotic world.

When the Bible is examined with a focus on animals, the inspired writers are found to be abundant with insights. In the Book of Proverbs a wonderful example appears of the wisdom in animals and the great differences between species. The Prophet Agur begins by listing ants as “a people not strong, yet they prepare their food in summer” (Proverbs 30:24-28). He demonstrates keen insight as ants demonstrate sophisticated methods of communication, architecture, food storage, military strategy, discipline and social organization. Their “system of education” involves a transference of knowledge and duty through osmosis and a complex of scents, or pheromones, so that young ants are able to function within the colony from an early age. Agur’s choice of ants is most appropriate as by volume ants along with termites are by far the world’s largest source of animal biomass, surpassing even the great whales and elephants. By numbers, the biologist E. O. Wilson at Harvard University estimates that there are in excess of twenty thousand ant species and these involve over one million billion ants. By weight the ants of the world weigh four times as much as all of the birds, reptiles, amphibians and mammals combined.

Agur next cites the rock badgers which live in rocky mountaintop retreats. These marmot-like creatures are known for an excellent sense of vigilance and security, and while “feeble,” as the passage says, they maintain an effective alert system through elaborate calls, cries and barely audible sounds.

Locusts are a further source of wisdom, according to Agur, because of the way that progress in orderly ranks across great distances. Biological science still is not sure how the internal organization of these great cyclical swarms maintain coherence and internal order, but they do.

The larger meaning of this focus on these animals is that the creatures are worthy of respect because one never knows when some pertinent, perhaps potent insight can come to us through the animal kingdom. Certainly the prophet Agur considers these animals as worthy of study and respect as they are among the sources of embodied wisdom in the world.

In the Gospels, Jesus says a variety of things about animals. He instructs us to behold the birds. This means we should pay attention to them. He also reminds us that God is aware of the animals because our Heavenly Father feeds them.

Saint Ambrose (340-397) comments on this passage by describing creation as a wonderful “theater of learning” and tells us that we will know ourselves better if we know the creatures. Yet he adds that “we cannot fully know ourselves without first knowing the nature of living creatures.”

Saint Basil (329-379) declares that the lessons from God are everywhere in creation. “Recognize everywhere the wisdom of God; never cease, and through every creature, to glorify the Creator.”

Jesus continues his emphasis on creation by telling us to “consider the lilies.” If this is a subject for Jesus Christ, should not we also be concerned with the plants and flowers? This is not a command to learn about botany so much as an observation and vision that in nature, God’s life flourishes everywhere. It is only with the rise of science and technology that society distanced itself from nature and an awareness of creation as a treasury of deep knowledge about God. Besides, if we are to perform God’s will “on earth as it is in heaven,” then we should pay attention to how the world works as this is the earthy framework in which we are to do the work of God.

In an inspired commentary on our responsibility to love our neighbors, Saint Isaac the Syrian (7th to 8th century) gives us an enduring definition of the kind of love we should attain. For this example he does not talk about poor people, or the homeless or the sick or the dying. Rather he chooses animals. Listen to his inspired words on the character of love.

What is a charitable heart? It is a heart which is burning with a loving charity for the whole of creation, for men, for the birds, for the beasts, for the demons -- for all creatures. He who has such a heart cannot see or call to mind a creature without his eyes being filled with tears by reason of the immense compassion which seizes his heart; a heart which is so softened and can no longer bear to hear or learn from others of any suffering, even the smallest pain, being inflicted upon any creature. This is why such a man never ceases to pray also for the animals, for the enemies of truth, and for those who do him evil, that they may be preserved and purified. He will pray even for the lizards and reptiles, moved by the infinite pity which reigns in the hearts of those who are becoming united with God.

Jesus again speaks to us in the last chapter of Saint Mark when He tells the apostles, and therefore all of us, to go into all the world and preach the gospel to every creature. Look closely here. Jesus does not go to all the people, but he says go to every creature. Translators often because of their anthropomorphic biases switch the original word here from creatures to nations or countries. But the actual word in Greek is *ktisei*, meaning creatures. In the Epistle to the Colossians Saint Paul repeats the use of *ktisei* for creatures, meaning all created things including birds, fish, insects and even plants. This is a larger and more comprehensive challenge than merely teaching the Gospel to people. What might this mean?

To preach the gospel to every creature, we must first reach out to them, which also means we need to remove those concepts and things which separate us from them and the love of Christ. And what causes separation? The Apostle Paul says that there is nothing which can cause this separation — except our unwillingness to embrace the Way and love of Jesus Christ. This passage further requires that Christ’s disciples teach through actions as well as words. Words alone are not enough. The words have to identify how the love of Christ translates into actions embracing not only each other but the whole structure and design of society and a right behavior in dealing with the world. When applied this brings healing, sustainability, rejuvenation and regeneration to the land and the entire social structure.

In the Book of Revelation, the last book of the Bible, St. John the Evangelist is inspired to write that in the end, all the animals of earth and the creatures of the sea will join in heaven and “sing in the choir,” giving praise to God (Rev. 5:13). If the animals are destined to sing in the heavenly choir, this should mean we acknowledge this destiny by respecting their place in the world.

The Witness of the Fathers and Saints

Just as the Scriptures are clear in their teaching about animals and their importance, so are the saints. They offer a rich and varied commentary that takes us deeper into an awareness of the cosmic connectedness of all life. In particular, we should note the different reasons that the saints offer for respecting animals:

Tertullian (160-230), an early father from the second century, declares that not only are the animals created by God, but they have their own form of prayer:

Cattle and wild beasts pray, and bend their knees, and in coming forth from their stalls and lairs they too look up to heaven, their mouths not idle, Making the Spirit move in the fashion of their own kind.

Origen (185-254), considered “the Father of Theology” by early Christians, tells us that there is a divine art in the structure of the world and in the distribution of the creatures:

The divine art that is manifested in the structure of the world is not only to be seen in the sun, the moon and stars; it operates also on earth on a reduced scale. The hand of the Lord has not neglected the bodies of the smallest animals-and still less their souls- because each of them is seen to possess some feature that is personal to it, for instance, the way it protects itself. Nor has the hand of the Lord neglected the earth’s plants, each of which has some detail bearing the mark of the divine art, whether it be the roots, the leaves, the fruits or the variety of species. In the same way, in books written under the influence of divine inspiration, Providence imparts to the human race a wisdom that is more than human, sowing in each letter some saving truth insofar as that letter can convey it, marking out thus the path of wisdom. For once it has been granted that the Scriptures have God himself for their author, we must necessarily believe that the person who is asking questions of nature, and the person

who is asking questions of the Scriptures, are bound to arrive at the same conclusions.
Commentary on Psalm 1,3 (PG 12, 1081).

St. Jerome (341-420), one of the western fathers and historian of the Early church, reminds us that we admire the Creator for His creation of the animals, even the insects. He tells us that the mind of Christ is present even in the small creatures as well as the large:

We admire the Creator, not only as the framer of heaven and earth, of sun and ocean...but for bears and lions, and also as the Maker of tiny creatures: ants, gnats, flies, etc. So the mind that is given to Christ is equally earnest in small things as in great, knowing that an account must be made in the end for even an idle word.

St. Basil the Great (329-379) says that we should care about the animals because the Lord has promised to save and redeem them as well as we humans:

For those, O Lord, the humble beasts that bear with us the burden and heat of the day and offer their guileless lives for the well-being of humankind; And for the wild creatures, whom Thou hast made wise, strong, and beautiful, We supplicate for them Thy great tenderness of heart, for Thou has promised to save both man and beast, and great is Thy loving kindness, O Master, Saviour of the world.

St. John Climacus (509-603) relates that each animal embodies some portion of the purpose and wisdom of God:

Nothing is without order and purpose in the animal kingdom; each animal bears the wisdom of the Creator and testifies of Him. God granted man and animals many natural attributes, such as compassion, love, feelings...for even dumb animals bewail the loss of one of their own.

St. Guthlac (673-714), one of the most revered and beloved of the early British saints, tells us that holiness tames the animals:

Brother, hast thou never learned in Holy Writ, that with him who has led his life after God's will, the wild beasts and wild birds are tame? (Felix's Life of St. Guthlac)

His biographer, Cynewulf, considered the first great Anglo-Saxon poet, called St. Guthlac “the great hero of our time.” He then describes the saint through a narration on how the animals related to him:

Triumphant came he [St. Guthlac] to the hill; And many living things did bless his coming. With bursting chorus and with other signs The wild birds of the hill made known their joy Because this well-loved friend had now returned. Oft had he given them food when they were hungry, even starving, they had come straight to his hand and from it they ate their fill. The Song of Guthlac

Fyodor Dostoyevsky (1821-1881), the great Russian novelist who was spiritually formed by the monks of Optina Pustyn monastery, teaches readers to look beyond the superficial appearance of things into the mystery of Christ hidden in all people and all things. In this view, he reflects the traditional Russian Christian attitude toward the land and the loving respect which is required of each person toward the earth and all its creatures:

Love the animals. God has given them the rudiments of thought and joy untroubled. Do not trouble their joy, do not harass them, do not deprive them of their happiness, do not work against God's intent. Man, do not pride yourself on superiority to animals; they are without sin, and you, with your greatness, defile the earth by your appearance on it, and leave the traces of your foulness after you- Alas, it is true of almost every one of us! The Brothers Karamazov

A simple conclusion from the foregoing is that the Scriptures and the Saints agree that care for animals is a Christian concern. Both sources point to a spiritual obligation to respect the animals. They remind us that Christians have a responsibility to treat animals with a holy regard because they are God's creatures and because they have an appointed place in His creation.

The Conclusion of Biologists and Scientists

The studies of biologists and scientists indicate that we have not done a good job at preserving the world's living endowment of creatures. Even though God has bestowed a great abundance of animal and plant species on the world, that abundance is in fast decline. As a society we are causing a rapid drop in the diversity of creatures that is threatening extinction for a quarter of all mammals, a third of amphibians, and half of all coral reef species, according to a 2009 report from the International Union for the Conservation of Nature (IUCN).

In assembling their report on endangered species, the IUCN found that many more species are now in peril of extinction than when a similar study was conducted five years ago. According to report editor Jean Christophe Vie, "Biodiversity continues to decline. It's happening everywhere." Mr. Vie said biodiversity threats need to be highlighted and combated, even at a time when world leaders are preoccupied with economic recession. Unlike financial markets and debts, extinction is irreversible. Once a species disappears, it is gone forever.

Mr. Vie urged that governments and citizens undertake a series of lifestyle changes to lessen the use of energy and reduce consumption, redesign cities, and reassess the environmental consequences of globalization-producing goods in poor countries where wages are low and transporting them thousands of miles for sale in places where wages are high, such as the United States and Europe. Vie added that global climate change will only make this situation worse. In Europe, "about 50 percent of all animal species are vulnerable," observes Barbara Helfferich, a European Union spokeswoman. "Habitats are shrinking and a lot needs to be done. We are not doing enough to halt biodiversity loss." Part of the problem is that most people fail to see how their actions have consequences for the natural world.

To illustrate the interconnectedness between human actions and creatures, examine the story of a malaria epidemic in Borneo. The World Health Organization (WHO) tried to control the disease by eradicating mosquitoes through the use of DDT, a pesticide now banned in most countries. The DDT did its job and eradicated most of the mosquitoes. But then a series of unexpected consequences began to unfold. The pesticide also wiped out the wasps that had controlled the local thatch-eating insects. The result was that the straw roofs on the local huts began to collapse. At the same time the DDT poison accumulated in the lizard population because the lizards ate the dying mosquitoes. This caused the cats which dined on the lizards to bioaccumulate the DDT and die from pesticide poisoning. Without cats the rat population multiplied and unleashed a ferocious epidemic which infested fields and villages and decimated the food crops. To cure this larger rat problem, the WHO was forced to parachute in 14,000 new cats to control the rats in what officially became known as “Operation Cat Drop.”

The lesson from this situation is that by using a dangerous pesticide to remove a serious insect pest, nature’s balance was disrupted and the intended solution caused far more problems for the local population than the problem which originally existed. This sequence of unexpected consequences shows that solutions to problems must be in harmony with nature and they must not create additional new problems.

Why are we concerned about losing animal and plant species?

God gave the world such an abundance of different animals and plants, it might seem that if we lose a few, it will not make too much difference. In fact, this is not true. When humans cause a species to go extinct, this demonstrates that we are living out of harmony with God’s commands and His creation. Each creature is important and should be preserved. The very existence of species that are threatened because of human impact tells us that we are living in a manner that is destructive to the life of the world. Endangered species are evidence of a failure to respect and have holy regard for what God has created on earth. If we disregard these species, retribution will likely come through a loss of the services which animal and plant species provide. For example, the island of Borneo possesses some of the world’s most amazing orchids. Estimates are that between 2,500 and 3,000 orchid species grow in its humid, but botanically unexplored rainforests. Many of these flowers are not yet catalogued by science. These orchids are highly valued for their exotic aromas and their amazing color combinations. But these orchids are endangered because of illegal logging, gold mining, and the clearing of forests to grow palm oil, and especially the illegal collecting and selling of wild orchids by orchid hunters who respond to high consumer demand for these beautiful flowers. Already these pressures in just the past decade have led to the extinction of hundreds of orchid species. According to a Global Forest Watch report, Indonesia is losing its forestlands so quickly that at the current rate of loss, Borneo's forests could vanish entirely in the near future. Here are several perspectives that should help us understand this situation.

The Modern lifestyle is causing an accelerating rate of animal and plant extinctions

Presently the world is losing an estimated 8,500 species per year. These species are disappearing for a variety of reasons, including pollution, habitat destruction, the introduction of invasive species, the early impacts of climate change, hunting and over harvesting, and the sprawl of cities due to growing human populations. This represents the loss of roughly one unique species every hour, or about 2% of all animal and plant species over the year. When this total is added to new estimates of how global climate change will increase the extinction rate, scientists report that by the middle of this 21st century (by the year 2050), we will be faced with the extinction and disappearance forever of roughly 50% of all the world's species! Imagine how the world would be if half of all the animal and plant species disappear?

The extinction of animal and plant species threatens the world's food supply

The world's food supply is dependent upon the entire web of life for vigor, vitality, and an ability to provide sustenance for a hungry human population. Every biological process has excess capacity built into its design to ensure strength and resilience. If one species disappears, there are sometimes others which can be substituted. However, as we lose species, we remove components from a working biological system. For perspective, imagine a car. How would your car run if someone removed a few parts from your automobile each week? It would not take long before the car would no longer operate properly. The food chain is similar. If we lose the ability to pollinate crops, a service which insects, birds and small mammals provide, about one-third of all fruit and vegetable crops would no longer bear fruit.

Presently the U.S. is experiencing a steep decline in bee populations, mostly because of pesticides. Some top pollinating species are now down to only 4% of their historic numbers. As we lose pollinating insects, the food chain becomes at risk. This is a sobering situation because the world has a growing population, but a declining agricultural base. A declining food supply coupled with a growing population means future hunger and starvation in some parts of the world. Protection of endangered species becomes protection for a healthy food chain and a healthy population.

The human economy is dependent upon the right functioning of nature

Humans depend on ecosystems such as coastal waters, prairie grasslands, and ancient forests to purify their air, clean the water, and supply food. When species become endangered, this indicates that these ecosystems are degrading. The U.S. Fish and Wildlife Service estimates that losing just one plant species can trigger the loss of up to thirty other insect, plant, and higher animal species. Some individuals who have not examined the issue declare that the economy is what is important, not these species. They forget that the economy rests upon the right functioning of the air, water, soils, plants, and all the other elements of the living environment. The fact is, the economy should be seen as a wholly owned subsidiary of the environment. Healthy human society rests upon clean air, clean water, and a vigorous ecosystem. Without a healthy environment, healthy families or a healthy economy cannot exist.

Nature holds cures for diseases that have not yet been discovered

Public health advocates add another argument for protecting plant and microbial species. They observe that we scarcely know what valuable medicines many of these unexamined species contain. For perspective, only a small percentage of the world's plants have been examined for medicinal values. As an example, just thirty years ago, loggers considered the Pacific yew tree a "trash tree." Pharmacologists then discovered that the bark of this thin, scraggily tree contained a unique compound, taxol. This bioactive chemical turned out to be a potent drug in the fight against lung and ovarian cancer. Because of the unique substances in the bark of the Pacific yew tree, tens of thousands of people now live who previously would have died. Like unread books in a library, species may have value that only becomes apparent after they are properly studied.

What Are the Solutions?

Solutions to save endangered animal and plant species take place at several levels: (1) in the home and local parish, (2) in the wider community by the shaping of attitudes and influencing public policy on endangered species, and (3) in the halls of government.

Here are suggestions on what you can do in your home and parish:

- (a) Develop respect and reverence for all life, including animals. Cultivate a consistent pro-life attitude. As you respect God's life in creation through the creatures, you are respecting what God has created. Know that in a reduced and diminished manner, the animals also bear some portion of the image of God.
- (b) Learn about the endangered species in your area. Before you can protect endangered species, you should identify them. Learn about their place in the local environment. Find out where they live and why they are endangered. Education and information are essential in protecting them. Make an effort to observe them and see them as God's creation. Tell your friends and family about the birds, fish, and plants that live near you and your community.
- (c) Minimize herbicide and pesticide use. Herbicides and pesticides may keep yards looking nice, but they are hazardous pollutants that harm wildlife at many levels. Many herbicides and pesticides take a long time to degrade; they build up in the soils and from there migrate into the food chain. Predators such as hawks, owls and coyotes are harmed if they eat tainted or poisonous animals. Amphibians, especially frogs and toads, are especially vulnerable.
- (d) Recycle all wastes and buy sustainable products. Buy recycled paper, and other sustainable products like bamboo and certified Forest Stewardship Council wood products to protect forests and forest species. Never buy furniture made from rainforest wood. Recycle your cell phones because a mineral used in cell phones and other electronics is mined in gorilla habitat. Minimize the use of palm oil because forests where tigers live are being cut down to plant palm plantations.

(e) Plant native vegetation. Native plants provide food and shelter for native wildlife. Attracting native insects like bees and butterflies helps to pollinate your plants. Invasive species compete with native species for resources and habitat. They can even prey on native species directly, forcing native species towards extinction.

(f) Make your parish and home wildlife friendly. If you live in a rural area, secure garbage in shelters or cans with locking lids, feed pets indoors and lock pet doors at night to avoid attracting wild animals. Reduce the use of water in your home and garden so that animals that live nearby can have a better chance of survival. Disinfect bird baths to avoid disease transmission. Place decals on windows to deter bird collisions. Millions of birds die unnecessarily every year because of collisions with windows. You can help reduce the number of collisions simply by placing decals on the windows in your home and office.

(g) Never purchase products made from threatened or endangered species. Overseas trips can be exciting, but souvenirs are sometimes made from species nearing extinction. Avoid supporting the illegal wildlife market. Avoid items made from ivory, tortoiseshell, or coral. Be careful of products made from or including fur from lions, tigers, polar bears, sea otters, crocodile skin, live monkeys or apes, most live birds including parrots, macaws, cockatoos and finches, some snakes, turtles and lizards, some orchids and cacti, or medicinal products made from rhinos, tigers, Asiatic black bear, or any other endangered wildlife.

(h) Restrain harassment of threatened and endangered species. Harassing wildlife is cruel and illegal. Shooting, trapping, or forcing a threatened or endangered animal into captivity is also illegal and can lead to their extinction. Do not participate in these activities and report them as soon as you see an incident to your local, state, or federal wildlife enforcement office.

(i) Protect wildlife habitat. The greatest threat that many endangered species face, is the destruction of their habitat (i.e., the places where they live). Scientists say that the best way to protect endangered species is to protect the places where they live. Wildlife, just like people, must have places to find food, shelter and raise their young. Logging, over-grazing, mining, oil and gas drilling, and development all cause habitat destruction. As you protect habitat, you also protect whole communities of animals and plants.

(j) Encourage parks and protected wild areas. Parks, wildlife refuges, and other open space should be protected near your community. Open space provides great places to visit and enjoy. Support wildlife habitat and open space protection in your community. When you are buying a house, consider your impact on wildlife habitat.

(k) Harmonize your lifestyle with God's creation. As Orthodox Christians who submit to the Scriptures and Holy Tradition, we must face the seriousness of the extinction threat. We are to take the steps in attitude and lifestyle that will prevent the extinction of species and preserve the abundance and biodiversity which is essential to the flourishing of life. Action must also take place by the larger community and by state and national government. Without government participation, individual action will not be sufficient.

(l) Preserve and respect The Endangered Species Act. Legislation by Congress provides a first line of protection for most U.S. endangered species. This is our modern Noah's Ark. Once designated as endangered or threatened, a species cannot be destroyed nor can its habitat be eliminated. Private landowners should be recognized and applauded who voluntarily protect rare plants and animals. All these efforts need to continue and expand to keep our natural heritage alive.

(m) Develop parish public policy advocacy. Orthodox parishes must become informed and active regarding the preservation of habitats and biodiversity. They must learn how to stand up for what God has created. This means that they should consider advocacy together with other community groups to ensure that development and industrialization do not impair the integrity of wetlands, streams, fields, and forests.

(n) Acknowledge and support positive actions. Parish creation care ministries should acknowledge and commend companies that have pledged to stop purchasing lumber from endangered forests. They should encourage Church and other purchasers of wood and paper products to make serious efforts to avoid purchasing products made from endangered forests.

(o) Cultivate civic responsibility for our nation's laws and policies. Write the United States Congress and the White House, the Environmental Protection Agency (EPA), the U.S. Forest Service, the U.S. Interior Department (especially its Fish and Wildlife Department), as well as state governments, and urge these departments to refrain from efforts to abolish or undercut established policies and initiatives to protect endangered species. Ask them to preserve wetlands, to minimize road building in national forests, and to preserve roadless wilderness areas.

(p) Urge local government to refrain from unnecessary development. The parish ministry of God's creation should ask the President and the Congress to respect God's creation. They should call upon our leaders to drop plans to explore for oil in the Arctic National Wildlife Refuge. This will have serious adverse effects on this unique but fragile ecosystem upon which many kinds of wildlife as well as indigenous people depend. We should urge government, industry, agriculture, and individuals to face the urgency of energy conservation and to accelerate the transition from a fossil fuel base to a solar and alternative energy base for the economy.

(q) Teach young people respect for animals in parish schools. We should educate young people and encourage parish members to acknowledge the Orthodox vision of creation. This vision discerns Christ and the Holy Spirit as our "Heavenly King" who is "everywhere present and fills all things." The implications of this vision should be taught to all children and emphasized to all adults. The statements of His All-Holiness Ecumenical Patriarch Bartholomew and our other hierarchs on the care of God's creation should be read and there should be opportunities to deepen faith through awareness that Orthodoxy implies a lifestyle of restraint, conservation, and frugality in our use of the world's resources.

Through the actions listed above, we extend the life of the Church into the life of the home and society. In the process we articulate an Orthodox way of life that is consistent with Jesus Christ, constructive, and earth healing. The more these guidelines are embraced, the more the consequences extend beyond endangered animal species into the larger society. These actions fortify the parish in virtue, strengthen families in the love of God, and teach children in a manner that provides stability into the future. For those who embrace these guidelines, the practice of respect for creation will strengthen spiritual vitality and bestow an ability to withstand the assaults of a coarsening culture upon those who strive to follow the Way and the Life of our Lord Jesus Christ.

Scientists emphasize that climate change has the potential to destroy the entire ecosystem which sustains not only the human species but also the wondrous world of animals and plants. The choices and actions of what is otherwise civilized modern man have led to this tragic situation, which in essence is a moral and spiritual problem which the divinely inspired Apostle Paul articulated with colorful imagery in underlining its ontological dimension. "For creation was made subject to vanity, not willingly, but by reason of him who subjected it...For we know that the whole creation groans and travails in pain together until now" (Romans 8:20,22).

- HAH Ecumenical Patriarch Bartholomew September 1, 2008

We in the Orthodox Church see Creation as the foundational concept by which we understand all environmental issues. When a creature is created, that creature has meaning, value and purpose. This is true whether that creature is a human person, an animal, an insect, a plant, a tree, a geological formation, or an astronomical body. It is impossible to exaggerate the importance of creation as a foundational concept. It means that we must accept the reality of every creature as meaningful.

- HE Metropolitan Nicholas of Amisos Antiochian Village, June 15, 2002

In affirming the sacred images, the Seventh Ecumenical Council (Nicaea, 787) was not primarily concerned with religious art, but with the presence of God in the heart, in others and in creation. For icons encourage us to seek the extraordinary in the ordinary, to be filled with the same wonder of the Genesis account, when: "God saw everything that He made, and indeed, it was very good" (Gen. 1.30-31). Icons are invitations to rise beyond trivial concerns and mental reductions. We must ask ourselves: Do we see beauty in others and in our world? The truth is that we refuse to behold God's Word in the oceans of our planet, in the trees of our continents, and in the animals of our earth. In so doing, we deny our own nature, which demands that we stoop low enough to hear God's Word in creation. We fail to perceive created nature as the extended Body of Christ. Eastern Christian theologians have always emphasized the

cosmic proportions of divine incarnation. For them, the entire world is a prologue to St. John's Gospel. And when the Church overlooks the broader, cosmic dimensions of God's Word, it neglects its mission to implore God for the transformation of the whole polluted cosmos. On Easter Sunday, Orthodox Christians chant:

Now everything is filled with divine light: heaven and earth, and all things beneath the earth. So let all creation rejoice.

- HAH Ecumenical Patriarch Bartholomew, Fordham University, October 27, 2009

It is unfortunate that we lead our life without noticing the environmental concert that is playing out before our eyes and ears. In this orchestra, each minute detail plays a critical role. Nothing can be removed without the entire symphony being affected. No tree, animal, or fish can be removed without the entire picture being distorted, if not destroyed.

- HAH Ecumenical Patriarch Bartholomew, Moscow, Russia, May 26, 2010

Far too long have we limited our understanding of community, reducing it to include only human beings. It is time that we extend this notion also to include the living environment, to animals and to trees, to birds and to fishes. Embracing in compassion all people as well as all of animal and inanimate creation brings good news and fervent hope to the whole world.

- HAH Ecumenical Patriarch Bartholomew, June 30, 2004