The UN Convention on Biodiversity (UNCBD) affirms the ‘intrinsic value’ of species, and that nation States are responsible for their conservation. UNCBD is ratified by all UN members except USA and Holy See. Extinction has continued at pace since UNCBD’s ratification in 1993 with extinction rate 1000 times natural.

UNCBD, like conservation science, commends ‘protected areas’ which exclude people and their rights to livelihood from such areas as principal device for conservation. But in protected areas through government corruption and commercial coercion, and through industrial anthropogenic pollution of the biosphere, creatures are still being pushed towards extinction. In Borneo and Sumatra orang utans are treated with extinction by oil palm plantation expansion and protected areas are too small to provide them sufficient land area. The German nature reserve an insect survey found a 78% decline in insects numbers from 1989 to 2013. Humanly caused climate change, unless reversed, will extinguish approximately one third of species by the end of the present century.

Conservation science, like evolutionary biologist Alfred Russel Wallace in his ‘Sarawak law’, does not consider Homo sapiens’ role in guarding species, so misses the success of indigenous people in sustaining biodiversity over millennia in ancient forests such as Borneo and elsewhere. In Genesis 1 - 3, Adam and Eve are indigenous forest dwellers but they image God and are called to name the animals, and to tend and care for creation.

Ephraim the Syrian and Augustine differ on the meaning of the naming story. Ephraim emphasises the harmony it shows between humans and other animals, Augustine emphasises the difference it shows in that humans are the rational creatures capable of naming the others. This marked divergence of East and West towards human-creature relations is being healed by Pope Francis and Patriarch Bartholomew.

Laudato Si’ suggests UNCBD could perhaps now be ratified by Holy See. BUT the
approach to conservation in LS is radically different, as also illustrated in the documentary Fiat Lux: Illuminating Our Common Home, Vatican City, 8 December 2015. Documentary includes not only endangered species and habitats but endangered indigenous peoples and their livelihood practices. It suggests war, exploitation and conflict are the causes of habitat and creaturely destruction and that compassion and peace are essential to ending species extinction.

St Francis exemplified love for creatures and the poor since ‘everything is connected’, and his harmony with creatures healed the rupture of humanity and creatures, and recovered the state of innocence that is still perceptible in the lives of indigenous communities such as the Penan.

In LS human destruction of creaturely habitats - the leading cause of extinction - is related to human disregard for other humans, destruction of others culture and property rights, including indigenous peoples’, and that indigenous people are the ones who care for their land best.

In LS the State is not the principle or sole carer of creation - it calls for local communities, cooperatives, businesses and families as well as governments to care for creation, and that indigenous people have a stronger sense of intergenerational responsibility for creation than others.

In LS intrinsic value resides in habitats, ecosystems, that are dwelt in by humans and other creatures. These ecosystems are webs of relationships which reflect the Trinitarian dynamism of God.

Hence ecological conversion to bring lasting change needs to be ‘also a community conversion’ that entails a ‘loving awareness’ that we are ‘joined in a splendid universal communion’ with all creatures.

Conserving the community of creatures is the responsibility of all human communities in their local places, and not only States. though State law - including land and property law - and ecosystem science should support this responsibility. Those who know best how to do it are those who have done it the longest, in ancestral communities. Where these communities have been given land rights - whether on common managed Alpine pastures in Switzerland or common managed forests in Borneo and Brazil - they have proven better guardians than the modern partnership of the nation State, commerce, and conservation science.
Indigenous Peoples, Land Rights and Care for Creatures

Revd. Prof. Michael S Northcott
UN Convention on Biodiversity affirms ‘intrinsic value’ of biological diversity, including its ecological, economic, cultural and aesthetic values, and its importance for sustaining the ‘systems’ of the ‘biosphere’.

It also affirms that ‘the conservation of biodiversity is a common concern of humankind’, that ‘States have sovereign rights over their own biological resources’, and that ‘States are responsible for conserving their biological diversity and for using their biological resources in a sustainable manner’ (UN 1992)

UNCBD 1992 ratified by all member States except USA and the Holy See but it is not working
From 1970-2012 mammal, amphibian and avian terrestrial numbers declined 38%: Freshwater species declined 81%: Marine species declined 36%  WWF Living Planet Report 2016

Ocean mammal and fish populations have declined 89% since onset of industrial revolution. ‘Historical baselines for large marine animals' Heike K. Lotze and Boris Worm, Trends in Ecology and Evolution 24 2009

Insect populations declined 78% in protected area measurement sites 1989-2013 Vogel, Gretchen (2017) Where have all the insects gone? Science 356 2017

Current extinction rates are 1,000 times higher than the natural background and future rates of extinction are likely to be 10,000 times higher. ‘Estimating the normal background extinction rate’, de Vos, Juriann, Conservation Biology 2015
2010 AICHI CoP of CBD agreed targets for increasing protected areas to conserve biodiversity but they are *Nation State* targets and exclude other human communities.

Protected areas are the principal conservation device, since 19C romantic-inspired environmental campaigns of William Wordsworth, Thomas Carlyle (UK) and John Muir (USA).

However while English Lake District is a ‘national park’ its biodiversity is secondary to human cultural land uses for sheep farming, hiking, and residence.

Yosemite National Park excluded indigenous native Americans although they *had* important role in conservation of biodiversity. John Muir did not respect them or understand their role.
Not only environmentalists but conservation scientists support protected areas - which means in practice ‘biodiversity hotspots’ are set aside from human use - as the best way to save endangered creatures and species.

E O Wilson says ‘half earth’ should be set aside

But this misconstrues role of humans and misses that even with protected areas extinctions can proceed
WHERE HAVE ALL THE INSECTS GONE?

Surveys in German nature reserves point to a dramatic decline in insect biomass. Key members of ecosystems may be slipping away.

By Gretchen Vogel, in Krefeld, Germany

Weighty disappearances
The mass of insects collected by monitoring traps in the Orbroicher Bruch nature reserve in northwest Germany dropped by 78% in 24 years.
Belief that there is an intrinsic conflict between wellbeing of humans and other animals arose from Darwin and Wallace’s theory of evolution which emphasised competition over symbiosis, and excluded humans as an evolutionary force.

Hence in his ‘Sarawak law’ Wallace said that ‘every species has come into existence coincident both in space and time with a pre-existing closely allied species.’

A R Wallace, ‘Sarawak Law’ 1869
The Bornean orangutan (*Pongo pygmaeus*) is now critically endangered according to the International Union for Conservation of Nature (IUCN). This change means that both species of orangutan now face an “extremely high risk of extinction in the wild.”

In 2010, only 59.6% of Borneo’s forests were suitable for orangutans. And, while much of this land is technically protected by the Indonesian, Malaysian and Brunei governments, illegal logging and uncontrolled burning are still continual threats.

In addition, the smaller patches of remaining forest may be unable to sustain the groups currently living there. These zombie orangutan populations can adapt to survive for decades in degraded or isolated habitats, but the poor health or low numbers may prevent successful reproduction.
'the key reason there is so much biodiversity...which makes the forests so valuable and worth turning into a park is that there have been people looking after it in a symbiotic relationship for ages. And what is more, as we were increasingly to learn on our expedition, their knowledge and understanding of it far exceeded our own superficial scientific analysis.'

(Hanbury-Tenison *Finding Eden* 2017, 64).
Gazetted boundaries of National Parks in Sarawak constitute only 6.6% of the forested area and they are also subject to fragmentation and deforestation (Hon and Shibato 2013).

Using logging road blockades, while at the same time registering land claims in Sarawak courts, the Penan saved 163,000 hectares of upland rainforest in the Baram District.

Penan villages in this area have collaborated together to form the ‘Penan Peace Park’. The ancestral lands and its ecosystem and living creatures are intact and now designated by the Penan as a self-governing nature reserve though not included on official maps of ‘nature reserves’ in Sarawak.

While conserving biodiversity Penan continue to hunt and fish and plant small gardens and fruit trees (Straumann 2014 270).
And the Lord God said, ‘It is not good that the man should be alone; I will make an help meet for him. And out of the ground the Lord God formed every beast of the field, and every fowl of the air; and brought them to Adam to see what he would call them: and whatever Adam called every living creature, that was its name. Genesis 2. 18 - 20

The original indigenous forest inhabitants are divinised in the bible as Adam and Eve and they possessed the wisdom of the forest and the animals were not afraid of them

Genesis gives them a democratic divinisation since they are ordinary indigenous forest dwellers, who dwelt without State or hierarchy, whereas in Egypt and Assyria it was kings who bore the divine image
In order that God might make known the wisdom of Adam and the harmony that existed between the animals and Adam before he transgressed the commandment. The animals came to Adam as a loving shepherd. Without fear they passed before him in orderly fashion, by kinds and species. They were neither afraid of him nor were they afraid of each other.

Ephraim the Syrian, *Commentary on Genesis*

God first showed man how much better he was than cattle and all irrational animals. This is signified by the statement that all the animals were brought to him that he might see what he would call them and give them names. This shows that man is better equipped than the animals in virtue of reason, since only reason that judges concerning them is able to distinguish and know them by name.

Augustine, *Two Books on Genesis Against the Manicheans*
“Laudato Si’” presents strong evidence the Holy See now regards the status of creatures as a matter of central moral, spiritual and theological concern though it does not attribute individual species with ‘intrinsic’ value but rather ecosystems.

For LS value of creatures is derivative from their status as divinely created beings which are in a ‘web of relationships’ with humans who are also creatures.

LS suggests a modified stance of the Holy See regarding CBD, but that the Holy See takes a different approach to the UN on protection of creatures.

So does the documentary projected onto St Peters during the 2015 Paris Conference of the Parties.
Fiat Lux: ‘Illuminating Our Common Home’ 12.08.2015
Francis helps us to see that an integral ecology calls for openness to categories which transcend the language of mathematics and biology, and take us to the heart of what it is to be human. Just as happens when we fall in love with someone, whenever he would gaze at the sun, the moon or the smallest of animals, he burst into song, drawing all other creatures into his praise. LS 11
The harmony between the Creator, humanity and creation as a whole was disrupted by our presuming to take the place of God and refusing to acknowledge our creaturely limitations.

It is significant that the harmony which Saint Francis of Assisi experienced with all creatures was seen as a healing of that rupture. Saint Bonaventure held that, through universal reconciliation with every creature, Saint Francis in some way returned to the state of original innocence. LS 66
Because all creatures are connected, each must be cherished with love and respect, for all of us as living creatures are dependent on one another. LS 42

It is no coincidence that, in the canticle in which Saint Francis praises God for his creatures, he goes on to say: “Praised be you my Lord, through those who give pardon for your love”. Everything is connected. Concern for the environment thus needs to be joined to a sincere love for our fellow human beings and an unwavering commitment to resolving the problems of society. LS 91
“When we fail to acknowledge as part of reality the worth of a poor person, a human embryo, a person with disabilities – to offer just a few examples – it becomes difficult to hear the cry of nature itself; everything is connected. Once the human being declares independence from reality and behaves with absolute dominion, the very foundations of our life begin to crumble, for “instead of carrying out his role as a cooperator with God in the work of creation, man sets himself up in place of God and thus ends up provoking a rebellion on the part of nature” (Centesimus Annus) LS 117
“We have only one heart, and the same wretchedness which leads us to mistreat an animal will not be long in showing itself in our relationships with other people. Every act of cruelty towards any creature is “contrary to human dignity”. We can hardly consider ourselves to be fully loving if we disregard any aspect of reality: “Peace, justice and the preservation of creation are three absolutely interconnected themes, which cannot be separated and treated individually without once again falling into reductionism” (Conference of dominican Bishops, Pastoral Letter Sobre la relación del hombre con la naturaleza 1987) LS 92
LS suggests that human destruction of creaturely habitats - the leading cause of extinction - is related to human disregard for other humans, including indigenous peoples.

It is essential to show special care for indigenous communities and their cultural traditions. They are not merely one minority among others, but should be the principal dialogue partners, especially when large projects affecting their land are proposed. For them, land is not a commodity but rather a gift from God and from their ancestors who rest there, a sacred space with which they need to interact if they are to maintain their identity and values. When they remain on their land, they themselves care for it best. LS 146.
Greater investment needs to be made in research aimed at understanding more fully the functioning of ecosystems and adequately analyzing the different variables associated with any significant modification of the environment. Because all creatures are connected, each must be cherished with love and respect, for all of us as living creatures are dependent on one another. Each area is responsible for the care of this family. This will require undertaking a careful inventory of the species which it hosts, with a view to developing programmes and strategies of protection with particular care for safeguarding species heading towards extinction.
As life and the world are dynamic realities, so our care for the world must also be flexible and dynamic. Merely technical solutions run the risk of addressing symptoms and not the more serious underlying problems. There is a need to respect the rights of peoples and cultures, and to appreciate that the development of a social group presupposes an historical process which takes place within a cultural context and demands the constant and active involvement of local people from within their proper culture. Nor can the notion of the quality of life be imposed from without, for quality of life must be understood within the world of symbols and customs proper to each human group. LS 144
Many intensive forms of environmental exploitation and degradation not only exhaust the resources which provide local communities with their livelihood, but also undo the social structures which, for a long time, shaped cultural identity and their sense of the meaning of life and community. LS 145

In some places, cooperatives are being developed to exploit renewable sources of energy which ensure local self-sufficiency and even the sale of surplus energy. This simple example shows that, while the existing world order proves powerless to assume its responsibilities, local individuals and groups can make a real difference. They are able to instil a greater sense of responsibility, a strong sense of community, a readiness to protect others, a spirit of creativity and a deep love for the land. They are also concerned about what they will eventually leave to their children and grandchildren. These values are deeply rooted in indigenous peoples. LS 179
The “Trinitarian dynamism of God” is reflected in all persons and creatures which are “created according to the divine model” and hence everything in creation is connected in “a web of relationships” (LS 240)

‘God’s presence in all creatures means that we should not look on plant and animal species merely as “‘resources’ to be exploited” since “they have value in themselves” ’(LS 33)

‘We take these (eco)systems into account not only to determine how best to use them, but also because they have an intrinsic value independent of their usefulness. Each organism, as a creature of God, is good and admirable in itself; the same is true of the harmonious ensemble of organisms existing in a defined space and functioning as a system.’ (LS 140)
The ecological conversion needed to bring about lasting change is also a community conversion. This conversion calls for a number of attitudes which together foster a spirit of generous care, full of tenderness. First, it entails gratitude and gratuitousness, a recognition that the world is God’s loving gift, and that we are called quietly to imitate his generosity in self-sacrifice and good works: “Do not let your left hand know what your right hand is doing... and your Father who sees in secret will reward you” (Mt 6:3-4). It also entails a loving awareness that we are not disconnected from the rest of creatures, but joined in a splendid universal communion. LS 220