

1 Mutual Utilization of Human and Wildlife
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5 Thank you very much for your kind introduction. I am very honored to have this opportunity
6 to speak here at the Wildlife and Society Conference. In fact, I was asked to speak at the
7 conference one year ago, but it was postponed and cancelled due to the corona disaster. Thank
8 you very much for organizing it over a year ago.

9 The title of today's lecture is "The relationship between humans and wildlife that utilize
10 each other. We received several proposals about this half a month or a month ago. Among
11 them, I chose this theme after consulting with President Suzuki and Mr. Sudo.

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14 I always use the slides of Dr. Masato Yoshida, who is probably the vice president of the
15 Wildlife Sociological Society of Japan at the moment. Thank you very much. As is often said,
16 there are two types of nature conservation ideas. One is the protection type, which is to protect
17 the pristine nature, and the other is the conservational type, which is to ensure sustainable
18 use of resources. The other is the "conservational" type, which means sustainable use of
19 resources. In addition, I think Dr. Yoshida mentioned that there is also the restoration type.

20 In the beginning, nature conservation was developed from the idea of how to protect the
21 untouched nature when the western part of the United States was developed.

22 For example, Yellowstone became a national park or a world heritage site. I think one of the
23 issues we need to discuss today is to what extent the term "pristine" is true.

24 Some audience may have thought that my title was a contradiction. The question is whether
25 the animals that utilize humans are wild or not. I think that the pristine nature of Yellowstone
26 did not actually include indigenous people's use of it.

27 This concept eventually became the concept of sustainable development. It is not just about
28 protecting endangered species, but also about biodiversity as a whole, or contributing to the
29 blessings of nature, or human well-being. The concept of ecosystem services emerged around
30 the Millennium Ecosystem Assessment in 2005. According to the Secretariat of the
31 Convention on Biological Diversity, the concept of ecosystem services is still in the process of
32 development.

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35 There are two major trends in nature conservation: protection and conservation. Protection
36 is simply put, the idea of denying the use of nature. Conservation, on the other hand, is the

1 idea that humans cannot live without the blessings of nature, and that these blessings should
2 not be used up by the current generation. Conservation is for the use of the next generation,
3 so to speak.

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6 I often say that savings and life are for use. The purpose of savings cannot be saved but to
7 be used. However, we have to use it sustainably. Another point of contention is that there are
8 two perspectives: top-down protection of nature from above, or protection by local people.

9 For example, there may be people who come from abroad like righteous allies and they can
10 protect nature. How that will be perceived by the local people is another story. Rather, it is
11 important to nurture people who will protect the local nature and make use of it in their daily
12 lives. Later, I will introduce the efforts of UNESCO. UNESCO is the UN Educational,
13 Scientific and Cultural Organization. The theory of UNESCO is not only about biological
14 diversity, but also about cultural diversity. In short, I think that we need to emphasize that the
15 culture of using the blessings of nature is as diverse in culture as it is diverse in living things.

16 Recently, I have often said the following. Regarding nature conservation, there are now 17
17 SDGs. It's not necessarily just about the environment. There is a more comprehensive goal of
18 sustainable development. Environmental issues are positioned to become one of the major
19 elements of this goal.

20 So we are not only focusing on nature conservation. The ultimate goal of the Convention
21 on Biological Diversity as a treaty is a good quality of life for humans. On other hand, it is
22 possible to think about living things for the sake of themselves, instead of thinking about them
23 for humans' sustainable society. Of course, it is possible, but the common understanding of
24 the Convention on Biological Diversity is to protect the good quality of people's life of the
25 present and future generations. In this sense, nature conservation is not an end in itself.
26 Rather, it is an indispensable means to a good life. People cannot live a good life without
27 nature, so let's protect it.

28 For example, I am a member of the Ecological Society of Japan, but it is difficult to do so
29 only through discussions within the Ecological Society of Japan. For example, I am a member
30 of the Ecological Society of Japan. Sometimes it is difficult to see how this can be linked to
31 human well-being.

32 In such a case, there could be a case where the measures and goals are reversed. In other
33 words, indigenous peoples may be driven out in order to create nature reserves.

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36 As I mentioned earlier, I am talking about the 17 goals. It can be said that environmental

1 issues have become part of the 17 goals, but not the only goal. On the contrary, it can be said
2 that it is no longer just an initiative for people who think about the environment, for the
3 purpose of having a more comprehensive sustainability.

4 Today, I would like to talk about climate change in a couple of ways. It seems to me that the
5 Convention on Climate Change is rather more mainstreamed than the Convention on
6 Biological Diversity. Just now, COP26 of the Convention on Climate Change is being held.
7 One of the reasons why climate change is more mainstreamed is this.

8 Until now, the Framework Convention on Climate Change has focused on mitigation
9 measures to reduce carbon dioxide emissions and prevent global warming. For some time now,
10 the emphasis has been on adaptation measures. In the case of mitigation measures, fields that
11 are not directly involved in climate change and global warming issues will be less involved.
12 Adaptation, on the other hand, involves everything that is affected by climate change,
13 including human life, health, industry, ecosystems, and how to overcome the negative effects.
14 In other words, it will be more comprehensive. I think this is one of the reasons why the
15 Framework Convention on Climate Change has become so mainstream.

16 I mentioned earlier that without biodiversity, without the gift of nature, there would be no
17 human happiness. In that sense, I think it is possible that the Convention on Biological
18 Diversity can be mainstreamed in the same way.

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21 In 2007, Yokohama National University published a translation of this report. The ultimate
22 goal discussed in this report is "human well being". However, if people live a good life, they
23 will have an impact on the environment. The impact on the environment is indirectly driven
24 by factors such as population growth, urbanization, and aging. Then there is the globalization
25 of the economy. These indirect driving forces directly affect ecosystems in various ways, which
26 are referred to as direct drivers here. According to the Millennium Ecosystem Assessment,
27 these factors can be divided into five major categories. The first one is land use change, which
28 damages habitats. In addition, there are five other factors such as climate change, alien species,
29 overfishing, and environmental pollution. In addition, climate change, invasive species,
30 overfishing, and environmental pollution are the other five factors that contribute to the loss
31 of biodiversity and various aspects of ecosystem services. In this way, human well-being is
32 compromised. It is important to note that the argument is that it becomes problematic when
33 a vicious cycle occurs in which it is undermined in the next generation with a time delay.

34 One of the ecosystem services is the provisioning service. These services include food,
35 clothing, shelter, fuel, medicine, and other goods that contribute to human life. There are still
36 parts of these services that are not traded in the market economy, but the economic value of

1 the parts that are traded in the market economy is very easy to evaluate. In contrast, for
2 example, it is difficult to evaluate the economic value of a forest that prevents flooding or a
3 tidal flat that cleans coastal waters.

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6 In 2001, or 20 years ago, the Science Council of Japan issued a report on the value of forests.
7 At that time, the economic value of forests as a provisioning service, as I mentioned earlier,
8 was evaluated to be about 670 billion yen per year. However, according to this report, the
9 annual value of environmental resources is estimated to be more than 70 trillion yen. The
10 basis for this estimate is written here in various ways.

11 I think this is based on the Mitsubishi Research Institute's estimate, which is over 80 trillion
12 yen. Many of the figures are almost the same as those in the report of the Science Council.
13 With a few exceptions, the Science Council also estimates more than 70 trillion yen per year.
14 To explain the calculation simply, it is written as the replacement cost method. For example,
15 tidal flats clean coastal water, but if you think about how much it would cost to build a sewage
16 treatment plant instead of tidal flats, you will see that it would cost a huge amount of money.
17 If all these factors are added up, which becomes over 70 trillion yen.

18 What I think is a little problem is that the Science Council of Japan is issuing the report
19 based on the report of a so-called think tank. I feel that it would have been better to base the
20 report on peer-reviewed papers. To put it bluntly, I a bit suspect 70 trillion yen. In any way,
21 we can clearly say that the value of regulating services is estimated to be much larger than the
22 economic value of provisioning services, so it is very important to protect them.

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25 However, it is not easy to explain everything just by the theory that protecting nature is
26 beneficial in the long run. Earlier, Mr. Sudo introduced me as a specialist in fisheries science.
27 In fisheries science, the textbooks say that it is better to catch fish sustainably without
28 overfishing. However, overfishing is a reality. Here is a little bit about how it is explained in
29 fisheries science textbooks. The discipline that deals with this is bioeconomics. It is a very old
30 textbook, giving two reasons. One is the economic discount rate. This is a key word that will
31 come up later.

32 For example, it says that there are 760,000 Antarctic minke whales in the Southern
33 Hemisphere. This is a bit of an old estimate. The Scientific Committee of the International
34 Whaling Commission argued that 2,000 whales each year would be a sustainable quota. If we
35 catch 2,000 animals each year, we can catch them forever. However, 2,000 animals times
36 infinite years does not mean infinite economic value. Next year's income for the same 2,000

1 whales will be discounted compared to this year's 2,000whales, and two years from now, it will
2 be doubly discounted. The discount rate would be, say, 5% or 3% per year. To put it simply,
3 if we catch 100,000 whales among 760,000 at once, we can turn that into money and invest
4 it in some other sector, or deposit it in a bank and earn interest. If the interest rate is higher,
5 we will make more money.

6 I understand it to be similar to that, but then the discount rate is applied, and the sum of
7 this infinite series is finite, even if it lasts for infinite years. In my university lectures, I always
8 start by asking students to find the answer to this equipartition sequence, but almost everyone
9 forgets it. But if I explain it to them, they got remember. For example, if the annual rate is 5%,
10 the present value of the fishery is only 2,000 whales times 20 years, according to this formula.
11 Sustainable catch, using the so-called logistic equation of internal natural rate of increase and
12 carrying capacity, r and K , can be written as $rK/4$.

13 The question is whether it is more profitable to continue doing this year after year, or to
14 drastically take out a part of K . In the case of taking all of the fish, the relationship between
15 the internal natural rate of increase, r , and the discount rate, δ , is such that if r is less than
16 4δ , then overfishing is more profitable; if δ is 5%, then overfishing is more profitable if the
17 internal natural rate of increase, r , is less than 20%. This is one reason for overfishing, which
18 has long been written about in bioeconomics textbooks. This concept of economic discount
19 rate is one of today's key words that will come up again later.

20 The other reason is the "tragedy of the commons., where if you are moderate and do not
21 overfishing, and others overfishing, the others get the benefit of the moment. The future is
22 naturally lost because of the overfishing. When it is lost, it is lost both equally. In this way,
23 those who overfished will gain the benefit of the present, while those who did not overfished
24 will not gain the benefit of the present and will lose the future. If that is the case, then the
25 incentive to catch it now will work. It's as simple as that. These are two of the most common
26 reasons. Now, the discount rate is said to be 5%. In fact, if you calculate how much present
27 value there is in protecting nature 100 years from now, you will find that it is not much.

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30 The famous book TEEB (The Economics of Ecosystems and Biodiversity) was published
31 around the time of the 2010 meeting of the Convention on Biological Diversity in Aichi
32 Prefecture, Japan. A similar kind of economic assessment is being done by the IPCC, and
33 there is a report called the Stern Report. I looked at how it is written in TEEB, and it is in
34 Chapter 6, and the title of that chapter is Economic Discount Rates and Ethics. Until I came
35 across this book, I thought that the discount rate (I said 5% or 3% earlier) I thought that the
36 discount rate (I said 5% or 3% earlier) was determined by the market economy. In other words,

1 as I said earlier, if you were to ask what would happen if you put that amount into investments
2 or into the economic growth rate, it would seem to be determined rather objectively, but this
3 book says that there are no purely economic guidelines.

4 Since responsibility for the future is an ethical issue, the book says that we need to use a
5 variety of discount rates, including zero, instead of going with 3% or 5% depending on the
6 market economy.

7 This is my understanding, but on the other hand, it could be said that we cannot
8 economically explain the protection of nature for future generations by using a discount rate
9 that is based on ordinary market principles. However, by setting a different discount rate, the
10 responsibility of future generations can be calculated using the same economics method.

11 As I mentioned earlier, if we look at the value in 50 years at a 5% discount rate, it will only
12 be 1/7th of the present value. In other words, the 50th power of 0.95 is about one seventh of
13 the present value. It is in this context that the word "ethics" comes into play.

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16 This is in the matter of sociologists, which is out of my knowledge, but I know that Al Gore
17 also mentioned it in *An Inconvenient Truth*. It's not a political problem, but a moral problem.
18 I think we have that in common.

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21 I am also reminded of the following advertisement. "There are some things money can't
22 buy. For everything else, there's MasterCard." In essence, it is acknowledging that there are
23 values that money cannot buy. Some audience may think that when I talk about environmental
24 economics, everything becomes a discussion about money. The people at the MasterCard
25 company seem to understand that this is not the case. MasterCard is building a website of
26 priceless examples of value that money can't buy. However, I think the purpose of the site is
27 to evaluate what can be evaluated economically.

28 Or, as I mentioned earlier, by manipulating the discount rate in assigning priorities and
29 options, it is possible to evaluate the value of what is important using economic methods.

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32 To change the subject, there is a theory of ecosystem services that says that there are five
33 factors. There were five factors: land use change, overfishing, climate change, pollution, and
34 exotic species, and the argument was that the ecosystem services of the original organisms are
35 compromised by the assessment of these factors. As I will discuss later, this argument is
36 slightly different from Japan's National Biodiversity Strategy.

1 In 2010, around the same time that the COP10 of the Convention on Biological Diversity
2 was held in Japan, we conducted the Japan Satoyama and Satoumi Assessment, which was an
3 attempt to create a Japanese version of the Millennium Ecosystem Assessment. This was led
4 by the United Nations University, and I think a number of ecologists and economists
5 participated in it.

6 At that time, there were several scenarios, which I will explain later in the section on climate
7 change scenarios, but at that time, we had a problem. For example, think about firewood and
8 charcoal. It's not that we can no longer use firewood and charcoal because we have turned all
9 the forests into bare mountains. The forests are still there. But we are not using the wood as
10 an ecosystem service. This means that the amount of wood that can be used is decreasing. I
11 knew that the UNU report could not be published until it had been reviewed by other
12 countries, so I asked the reviewers, who were from an organization called DIVERSITAS.

13 I asked them whether they would look at the amount of accumulation or the amount of use,
14 in other words, stock or flow. If you look at the ecosystem service theory I mentioned earlier,
15 there is no distinction between stock and flow.

16 We were troubled and asked the question several times. As I mentioned earlier, there is
17 accumulation of forestry resource, but utilization is decreasing. We asked what we should do,
18 but we got no answer at all. In the end, we looked at it more in terms of use, but at the final
19 summary stage, another person from Diversitas came up and said we should look at it in terms
20 of accumulation. I wished they answered it earlier. I think that Western researchers did not
21 understand the seriousness of this problem in Japan.

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24 According to Japan's Comprehensive Biodiversity Assessment or National Biodiversity
25 Strategy, the direct driving factors are slightly different from the five that were discussed in
26 the Millennium Ecosystem Assessment: three, or four if global warming is included. We can
27 roughly cope with the five. The first is overuse, which is land use and overfishing in the
28 Millennium Ecosystem Assessment, and the third is disturbance of the crisis, which is invasive
29 species and pollution. The second is the depopulation of mountainous areas (the so-called
30 shrinking population era). The term "underuse" is used to describe the loss of biodiversity due
31 to the decrease in human population in mountainous areas. This is not included in the five
32 factors of the Millennium Ecosystem Assessment. Here, we can see the difference from
33 Japan's original approach.

34 It is difficult to say whether this lack of use can be smoothly incorporated into the
35 Millennium Ecosystem Theory. The ecosystem service theory is very applicable to the case of
36 overuse, where the accumulation of resources has decreased and they cannot be used, but it

1 is not so applicable to the case where forests exist but are not being used.

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4 However, I found out a little later that such discussions were steadily progressing
5 internationally. That was the discussion at IPBES, the organization of the Convention on
6 Biological Diversity in response to the IPCC.

7 A similar discussion was taking place in an organization called IPBES,
8 Intergovernmental Science and Technology Platform on Biodiversity and Ecosystem Services.
9 The flowchart of ecosystem services has been rewritten. It's basically the same thing, that the
10 ultimate goal is to improve human wellbeing, the quality of life in this case. This is basically
11 the same as what is supported by the blessings of nature or ecosystem services. There is also
12 a slight change in the way of describing the indirect and direct driving factors, but it is
13 generally the same.

14 The major change is that there are two separate sections on the state of nature and the state
15 of use of nature. In other words, as I mentioned earlier in my discussion of the evaluation of
16 Japan's Satoyama and Satoumi, I used the terms accumulation and utilization.

17 The big difference is that these are written as separate compartments. In other words, our
18 problems can be described as the evolution and incorporation of ecosystem service theory. At
19 this time, I would like to change the term "ecosystem service theory" itself. At first, we called
20 it Nature's Benefit to People. This was around 2015. A little later, it was changed to Nature's
21 Contributions to People. The term "Contributions" implies that it is not only the nature's
22 benefits . Nature also brings misfortune and damage, arisen from the conflict between wildlife
23 and people, which is the subject of today's article.

24 The international concept of ecosystem services theory is now evolving, in two ways. One
25 is the separation between the state of nature (stock) and the flows that use it. The other is
26 that nature does not bring only blessings. This "not only brings blessings" was also written
27 some time ago in the Japanese version of the Comprehensive Biodiversity Assessment, for
28 example.

29 The Japanese translation of Nature's Contributions to People has not yet been established,
30 but I think it should be "nature's Karma", which includes not only benefits but also disasters.
31 I am the only one who has used this translation.

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34 Around 2010, I joined a project at the United Nations University, and I was also a member
35 of the DIVERSITAS committee at that time, but I was very dissatisfied. At that time, I thought
36 that ecosystem service theory was not so important. There are two reasons for this, as I

1 mentioned earlier.

2 The lack of utilization, which is the second reason cited in Japan's National Biodiversity
3 Strategy, has not been properly incorporated. The change from the bounty of nature to the
4 bounty of imports and oil is not well explained. Also, as mentioned earlier, nature is not only
5 a blessing, but also has negative effects. Some people said that it is important to have a sense
6 of reverence for nature.

7 I am sure this will be discussed in the panel discussion, but there have been opinions for a
8 long time that humans should not manage nature in the first place. On the one hand, there is
9 the opinion that nature is beyond human understanding.

10 On the other hand, there are those who say that wild animals are weak and helpless, and if
11 we don't protect them, they will become extinct. Both are very extreme. But what is clear to
12 us is that without the blessings of nature, we would not have a comfortable life, so we use
13 nature, and that nature sometimes brings us great misfortune.

14 In that sense, I am not going to argue whether we can control it completely or not. However,
15 that does not mean that it is better to not manage anything or to leave things to nature.

16 After the COP10 meeting of the Convention on Biological Diversity, I once said that the
17 ecosystem services theory would probably disappear in less than 20 years. In a sense, I think
18 that my prediction has come true. In other words, there is no doubt that the concept of
19 Nature's Contributions to People is trying to overcome these two weaknesses.

20 However, I don't think that changing the terminology is not determined by the IPBES
21 Secretariat. Many people still use the term ecosystem services. I think the term should be
22 changed naturally. I think it will take another 10 years.

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25 This is a survey of the Red List experts. The graph shows the major factors of decline of
26 threatened species in each taxonomic group. Note that, climate change is not included in these
27 drivers. Instead, there is natural succession, which means that some species decreased because
28 they are no longer used by people. However, this is a study of the past 50 years. If it were 50
29 years in the future, climate change would probably be recognized as an important factor also
30 in Japan.

31 Development is the biggest factor in the decline of all taxa. Habitat is lost due to land
32 development. The second drivers are different between taxonomic groups. The second driver
33 is invasive species for reptiles, pollution for amphibians, and over-exploitation for plants.
34 These seems somewhat convincing for each taxonomic group.

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1 Furthermore, there is actually another SSP scenario in addition to the RCP scenario. For
2 example, the land use change of how much bio-farmland should be increased is also
3 incorporated in the climate change scenarios. 2 degree and 4 degree scenarios have different
4 areas of bio-farmland. There are several standard patterns of land use change for each scenario.
5 We use them.

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11 The yellow area is much larger than that of the 4 degree scenario, but the blue areas are
12 smaller, so the overall impact under the 2 degree scenario is smaller. For each species, she
13 simulated what the habitat will look like in 50 or 100 years under these two scenarios. She
14 compared the area for 1605 species, which is a huge effort, but here are the results. Birds, in
15 particular, are migratory, so even with global warming, their habitat will be in higher latitudes.
16 They can easily move there, so the results are different depending on whether they migrate
17 or not. In total, the 2 degrees scenario has less impact on biodiversity.

18 I think that scientists around the world are unanimous in their opinion that the 4 degree
19 scenario is very huge impacts. However, as I mentioned earlier, there is a debate about the
20 fact that 3 degrees and 2 degrees are surprisingly subtle.

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24 We can then compare by scenario, by continent and by taxon. In Europe, this green
25 total is the reduction due to climate change, but the total is not much different because of the
26 large impact of land use change.

27 In Europe, the impact of land use change is also large, so the total impact is not expected to
28 change much. However, the impact of global warming is in the blue area, which naturally has
29 a larger impact in the 4 degree scenario. The total green color of the blue and yellow is not
30 much different. In other words, in Europe, there is actually not much difference between 2
31 degrees and 4 degrees. However, in other regions, the total impact of 2 degrees is less, so the
32 conclusion of this paper is that 2 degrees is still better. I would like to remind you that in the
33 Millennium Ecosystem Assessment or Japan's National Biodiversity Strategy, there were five
34 factors and six factors for underuse. I say again, these are land use change, climate change,
35 overfishing, pollution, alien species, and natural succession. However, in this IPCC scenario,
36 only two factors are taken into account. It takes into account climate change and land use

1 change, but does not look at the impact of invasive species. However, as I mentioned earlier,
2 land use change is the biggest problem for all taxa. Also, since this is the UNFCCC, we are
3 dealing with climate change. I think it is a big step forward to be able to take these two major
4 issues and evaluate them quantitatively based on specific scenarios.

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7 Researchers on the side of the Convention on Biological Diversity (CBD) should be able to
8 predict the impact of alien species and other factors. As for biofuels, a huge part of them are
9 sugar cane fields for biofuels. At present, about 20% of food cropland is biofuel cropland. This
10 is a huge area. If we don't make such efforts, we will end up with a four-degree scenario.
11 However, efforts are already underway to develop biofuel farmland, and the IPCC's sixth
12 report states that the current default is a 3 degree scenario. If we are already avoiding a 4-
13 degree rise, it can be said that this is the result of our efforts so far to combat climate change.

14 In other words, I think we are already at 3 degrees, not 4 degrees, because we are working
15 so hard. However, I think that we are still far from reaching the 2 degree target. At that time,
16 there are five different ways of land use. There are five ways to use land, but not all of them
17 are the same, whether it is the 2 degree scenario or the 4 degree scenario. For example, there
18 are various scenarios such as sustainable land use, large disparities between developing and
19 developed countries, and regional fragmentation. In each of these scenarios, the IPCC has
20 prepared a standard scenario of how to go about mitigation measures. And based on these
21 common scenarios, researchers around the world are making various predictions.

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24 It's not just bio-farmland. As you can see on the first slide, on the poster of this symposium,
25 there is also wind power, for example. This, of course, is also a mitigation measure. In order
26 to avoid global warming, we are trying to stop using fossil fuels and build windmills. But it's
27 not just windmills. We are also building dams. This was planned by a postdoctoral researcher
28 of mine at a meeting of the Ecological Society of Japan three years ago. So many dams have
29 been built and are being planned. We are discussing how far this will go in mitigating global
30 warming. This white area is where the dams have already been built, and the red area is where
31 they will be built. Even though we are talking about the Amazon River, we are building many
32 dams upstream, not in Brazil. I think there will be some conflicts between countries, but we
33 are building many dams in Brazil. Many of the dams are for hydroelectric power generation.
34 So, because we work so hard to take mitigation measures, we are no longer at 4 degrees.
35 Probably a lot of ecologists might look at this and they are destroying biodiversity to protect
36 it.

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3 However, the biggest problem now is bioethanol farmland. Dams are not a big problem yet if
4 we compare land use change with climate change impacts. Even at COP26 of the Climate
5 Change Convention, which is going on right now, there is no discussion about the
6 overbuilding of dams. Of course, elsewhere, there are arguments that this is a bit too much,
7 and that it is okay to destroy so much of the Amazon's precious nature, but the statistics up to
8 2013 show that the percentage of the total Amazon forest destroyed by dams is very small,
9 and that other factors are much larger. Probably, if we build the number of dams that I just
10 showed you, the impact will be enough to become one of the major factors in terms of land
11 use change.

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14 Now I would like to move on to my main topic. I don't think many younger students have
15 seen this picture, but many people of my generation have seen this caricature by Gary Larson.
16 It is a caricature of what we bottle up as protection.

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19 In a similar idea, A caricature of UNESCO's Man and Biosphere (MAB) Program, celebrating
20 its 50th anniversary this year. The MAB Program does not aim to bottle nature, but to
21 conserve nature in an open biosphere, where humans live. This is the Man and Biosphere
22 Program.

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25 Recently, I was thinking that this conference is called the Society for the Wildlife and
26 Society, but I think the purpose of the name is very similar to that of the Man and Biosphere
27 Program. In some of the presentations at this annual meeting, there are not a few
28 presentations about African elephants. I talked about the problem of animal damage as a
29 negative service or dis-service. On the other hand, there is the idea that we should not use the
30 African elephant. On the other hand, there is the idea that if we don't use African elephants,
31 poaching will occur. According to the analysis of the experts, it is true that closing the Chinese
32 market has had an effect in reducing the demand for ivory, and poaching has decreased.
33 However, it is not said that closing the Japanese market side is effective. Rather, it says that
34 in order to reduce poaching, it is more important to solve the problems of the communities
35 adjacent to the protected areas than to ban the trade.

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2 Japan's Ministry of the Environment has a Q & A on ivory, and while illegal hunting is
3 certainly a factor, the most important factor is population growth in the African region. For
4 example, this is the case in Tanzania, where the population has doubled in the last 30 years
5 and the GDP per capita has increased fivefold. Simply put, we can say that the impact of
6 humans on the environment has increased tenfold.

7 So, for example, I think it is impossible not to reduce the habitat of the African elephant at
8 all. As I mentioned earlier, the logic of not reducing habitat at all is the logic of developed
9 countries that have already developed the most habitats of wildlife. For places that are about
10 to develop and grow, it is impossible to not reduce habitats at all. For example, the criteria for
11 the Red List is that if there is a 30% reduction in the number of animals, it will be put on the
12 Red List. Whether or not there are a lot of them now is hardly the issue.

13 On the other hand, the IUCN website reports an increase in conflicts between humans and
14 elephants. Banning the use of elephants will increase the demand for poaching and smuggling.
15 This, they say, is bad for elephants.

16 For example, when the Olympics were held in Japan, the mayor of New York City asked us
17 to run a campaign to prevent people coming to Japan for the Olympics from buying ivory.
18 The Tokyo Metropolitan Government is very serious, so Governor Koike has set up a
19 committee on ivory.

20 28

21 On the other hand, the State of New York is catching deer because deer is over-abundant.
22 They are catching a lot of deer in their state, but they are unable to exterminate the elephants
23 that trample people down in Africa. I would think that this is a little strange. Among the state
24 of New York, the number of deer around New York City is increasing dramatically without
25 catching deer.

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28 The problem of new coronavirus is a major issue when discussing whether the problem can
29 be solved by not using wild animals. However, I thought that zoonotic diseases were not really
30 emphasized in the SDGs. However, there is no doubt that it will become a major problem in
31 the future. Shin'ichi Hayama said to me rather early on that we need to use wild animals to
32 solve this problem.

33 He said that, rather, wild boars contain zoonotic diseases. He said that it is rather more
34 complicated now that there are more wild boars than when the epidemic broke out 28 years
35 ago, and the problem has become even more complicated. He says that it is not a simple
36 problem that can be solved by not using them.

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3 However, another research shows that there was a certain amount of animal damage from
4 boar 28 years ago. It is only recently that their distribution area has expanded to the
5 northeastern Japan. The number of deer has also increased, as shown in this figure. It is
6 difficult to say how reliable the estimated number of inhabitants is, but there is no doubt that
7 it has been increasing for the past 28 years. And there have been many presentations at this
8 conference about the conflicts between people and wildlife. It's not just a problem in Africa.

9

10 31

11 Brown bears in Japan are one of the biggest problems. There are so many brown bears in
12 urban areas. Last year, they were relatively quiet, but this year, I never expected them to
13 appear in the eastern part of Sapporo. A bear has been sited near the southern limit of the
14 Olympic marathon course.

15 If we exterminate these bears, there were fierce protests from outside of Hokkaido. The
16 protests from outside the province make it difficult to proceed with extermination measures
17 under local guidance. What Sapporo City is working on is to show this information to citizens.
18 It says to collect information on their appearance and stay away from the places where they
19 are appearing. They almost always appear in my own yard, or on my way to school or work. I
20 have to say that this warning is out of date. This kind of problem, including the black bears,
21 is happening all over the country.

22

23 32

24 In this sense, one of the keywords for the new coronas now is "One Health. However, what
25 I mean by "One Health" is a little different from those who say that we should not use wild
26 animals.

27 People are part of the biosphere. We are part of a biosphere that uses and is used by others.
28 For example, some people say that if the mountains are rich, there will be less conflict with
29 people on the plains. However, if the mountains are rich, the population will increase. If they
30 increase, they will also come out to the villages. The reason they don't come out to the villages
31 is because they are afraid of humans. However, now that people no longer consider them a
32 threat, they are actually coming out to the villages. We need to think about how to solve the
33 problem of such conflicts. In this sense, there is an animal protection philosophy, which is
34 actually developing in the U.S. and Europe: 10 years ago, people were saying that we should
35 stop dolphin shows using dolphins caught in Taiji, Wakayama Prefecture, but now in the U.S.
36 and Europe, people are saying that we should stop dolphin shows themselves using dolphins

1 that are not wild. In the same way, they used to say that meat from domestic animals is good,
2 but only wild whales should be eaten, but now they say that domestic animals should not be
3 eaten either. I am sure that in 10 years' time, what they are saying will have changed even
4 more.

5 This is my idea. Is a state of complete separation between wildlife and humans, without
6 using wildlife, really wildlife-loving nature conservation? It is probably not realistic. Rather
7 than being a matter of good or bad, it is unrealistic. For example, farmland that does not have
8 animal damage problems is fine, but it was probably a wildlife habitat in the past. It could be
9 said that farmland was created after one layer of wildlife was removed in the past. I often say
10 that people and wild animals are not friends. They are wary of each other and will try to take
11 advantage of each other if there is an opening. So we should realize that we can coexist with
12 each other by being vigilant. Also, the use of animal meat is essential as a source of protein,
13 especially in developing countries. I don't think that is the case in developed countries, but
14 still, even in developed countries, wild animals are left to increase. The problem of animal
15 damage is becoming more serious not only in Japan, but here and there.

16 We can say that zoonosis control is one of the most important items of the SDGs. Then, it
17 is not necessarily true that we must use wild animals. However, I do think that we need to be
18 prepared for the fact that if we do not use wild animals, the number of wild animals will
19 increase, complicating the problem.

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21 33

22 There are the 2030 goals called the SDGs, and we are about to start discussing goals after
23 that as well. Frankly speaking, I don't think the SDGs were designed for a new corona to
24 become such a serious problem. Therefore, we need to think a little more about infectious
25 diseases. The good thing about the SDGs is that, as I mentioned earlier, they are not just a set
26 of goals, but also a set of goals that are specific, measurable, achievable, realistic, and time-
27 bound. The good thing about the SDGs, as I mentioned earlier, is that they are more
28 comprehensive. The good thing about the SDGs, as I mentioned earlier, is that they are more
29 comprehensive, and environmental issues are included in the comprehensive treatment of
30 everything, not just environmental issues. However, I think it would be better to be more
31 realistic. One of the things that I think would be better is the idea of accepting risk while
32 dealing with it (I am in the Department of Environmental Risk and Symbiosis at Yokohama
33 National University), rather than zero risk. I think the same applies to the problem of animal
34 damage and how to deal with wild animals. As I mentioned earlier, nature conservation is not
35 an end but a means to an end. I think it is better to focus on moderation, rather than having
36 our values blur to the extreme and not using nature at all.

1 As I mentioned earlier, I think we should focus on cultivating local human resources who
2 can use nature in a sustainable manner, rather than having nature protected by external
3 pressure from abroad.

4 This is my main topic for today, and it comes down to what I just said. It could be the picture
5 of the MAB Program or Gary Larson's picture. It's not about bottled nature. We are not
6 aiming for coexistence with wildlife by choosing not to use them at all. Rather, humans are
7 part of the biosphere. The fact that animal damage occurs means, on the contrary, that wild
8 animals are using humans. Humans use wild animals, but they also use them. I think it is
9 important for us to think about how we can maintain this relationship so that future
10 generations will be able to benefit from nature as well as be threatened by it. This may sound
11 a bit radical, but I wrote it in my book in English. This is my subject.

12 This is exactly what the MAB plan says, but I think it is an issue that the members of the
13 Wildlife and Society Society should consider as at least one of their options.

14 It is a great honor for me to be able to speak at such length today. I would be grateful if
15 many of you could listen and give me your active opinions. I am sure that there will be many
16 stimulating discussions during the panel discussion. Thank you very much for your attention.