Wildlife Conservation
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Lecture – 18
Preliminaries

Today we begin a new module capturing and restraining of wild animals.

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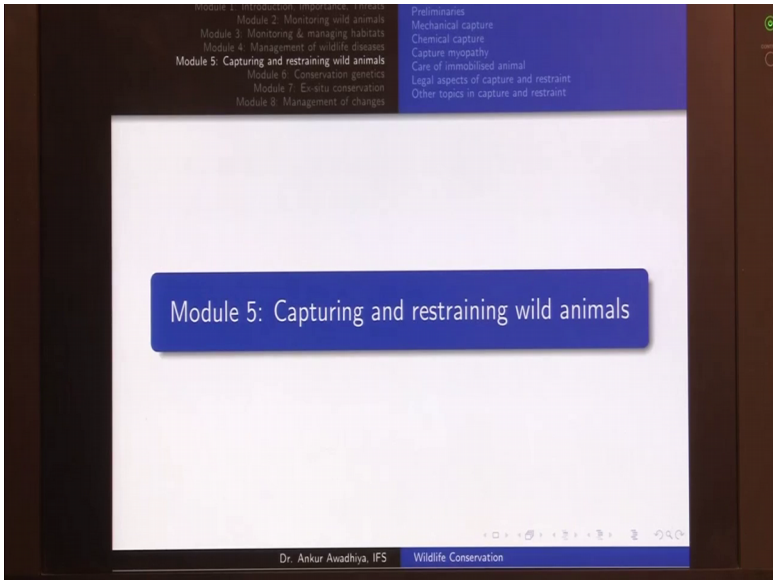

In this module will be having 7 lectures. The first one deals with preliminaries, which basically introduces us to what capturing and restraining means, what are the different kinds of restraints that we normally used on the animals. And what are the general points that we need to keep in mind whenever we are going out to capture or to restrain an animal? The second lecture, would deal with mechanical capture, the mechanical capture is capturing by way of things like noses.

So, you can use rope to capture an animal or you can use a trap or you can use a funnel or you can use a net. So, will look at one such method pitfall method, in greater detail and we were also consider, how and which method to use, in which situations? The third lecture would deal with chemical capturing. Now chemical capturing is capturing by the use of drugs. So, basically we could go for a drug that is either inhaled by the animal or is eaten or drunk by the animal or is injected into the animal. So, we will look at different kinds of chemicals that are used, how we use the injectable forms because those are the

most common ways and which we use chemical capturing of animals, how do we use a blow pipe? How do we use a tranquilizing gun?

Now, tranquilizing gun was an old term these days, you also called that is immobilizing guns. So, both these terms are used together and we will also look at different precautions that need to be taken. After that will deal with capture myopathy, the capture myopathy is a condition because of which, we lose a number of animals during our capturing and restraining procedures. So, essentially if you capture in animal and it gets into a lot of stress, then it might lead to certain physiological changes in the body, which might even lead to the death of the animal.

So, this is one thing that we need to keep in mind that all times, whenever we are handling a wild animal. Next will deal with the care of immobilized animals so, when you have immobilized an animal, say during using chemical capture, how do you take care of that animal? How do you ensure that this animal lives? And is and you are able to resuscilative back into normal conditions, then we would we will deal in great details about the legal aspects of captured and restraint.

So essentially, in our country wild animals that are normally found in protected areas so, even entering into a protected area is regulated by a number of laws. Even if the animal has moved out of the protected area, it is protected by certain laws, which prohibit normal individuals, normal citizens or people who do not have adequate veterinary training to handle these animals.

So, we will deal with these aspects and several others in the lecture to come legal aspects of capture and restraint and then in the final topic, we will have other topics in capture and restraint and that will deal with things like human safety. So, if you are going out to perform a capture and restraint and operation. There could be medical emergency. So, for instance if you have a dart that is field within immobilizing chemical and if you prick it into your skin. So, now, these darts have a very high concentration of the drugs, even if you prick your skin or even if that drug falls on to your skin and gets absorbed that might have consequences. So, how do we deal with these situations? What are the kinds of precautions that we need to take? And other such aspects will be delft with in the final lecture. So, let us now begin with preliminaries.

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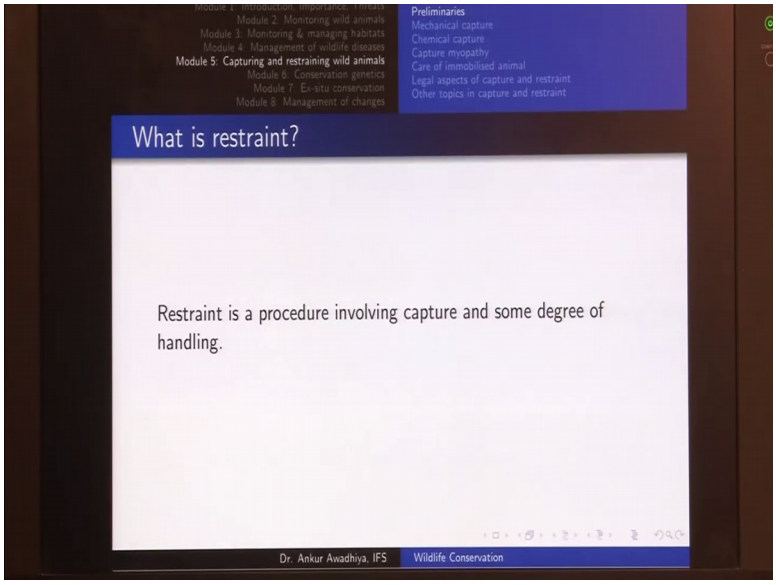

So, we will begin with what is a restraint? Now restraint is a procedure involving capture and some degree of handling. So essentially, when we say that there is a fisherman that is has gone into the seas and has used a net to capture certain fishes do, we call it a restraint? We will see no because it, involves capturing and certain degrees of handling. So, in certain degrees of handling includes things like, if you have a tiger that has wounded itself, say in a territorial fight. So, in that case and you have decided that, this tiger requires to is needs to be treated by giving a veterinary care. So now, a restraining would mean that you either immobilize this tiger physically or chemically, in most situations, we go for a chemical immobilization in these days.

So, basically you would shoot dart on this animal, you would immobilized. So, it has gotten these immobilizing chemicals and has now lost consciousness, then you will go there and then you will handle this animal. So, basically if it has some wounds, maybe those wounds will have to be washed and then cleaned and then applied with some medicines and once you have done that, then you bring this animal back into consciousness.

So, that is known as restraint. So, restraint is a procedure involving capture. So, in this case you have captured the animals chemically, for in certain situations would even go for a physical capture or even a behavioral capture. Now behavioral capture is something that we regularly use in the case of our camp elephants. So, if you have an elephant that is being used for departmental purposes. So for instance, we are using this elephant to take logs from one place to another place.

So this is an animal, that is a camp elephant or else we are using this elephant to counter the human wildlife conflict situations. So, we need this elephant and so we are keeping it in captivity we have given it adequate amounts of training. Now if this animal suffers from some disease suppose, it has a rock and it is foot. So, now, rock in a foot is an extremely painful situation and essentially, if there is a wild animal that is out that in the forest and is diseased and if you try to approach it, even if you want to treat it, the animal might feel stressed, it might feel that you are coming to give it some harm and it might come and attack you.

Now in the case of camp elephant, because we need to regularly handle them so, we give them certain sorts of behavioural trainings. So, what does that training mean? So, essentially if you have an elephant you would have a Mohoth that is there with the elephant and then this mohoth will regularly, try to touch the elephant, maybe with his bare hands, maybe with a stick.

So, that this elephant becomes desensitized to this to the sense of touching by a human being so essentially, when every time this elephant is being touched, whenever it is given a feed. So, this elephant will now associate this touching with something good. So, whenever this animal is being touched, then it is given food. So, it will think that whenever, I am being touched it is good for me, because I am getting something out of it. Similarly we could even give them certain treats or maybe we could give them certain amounts of play or certain amounts of exercises and all of those will be associated with this feeling of touching. So, once this animal else acclimatize to the sense of touching once it is understood that this human being does not mean any harm to me, he only means benefit to me.

So, next time in this animal has an injury in its foot or a rock in it is foot and the mohoth or the veterinarian comes there and then touches it and then clean this wound. The elephant will not find it as a situation, that is very odd for it, because it is already acclimatize, it already knows that these things happen and these things are not going to harm it. So, such kinds of restraints in which we are using certain amounts of training to the animal, to restrain that animal to keep it in one place and to enable us to handle that also goes in the in the term of restraint.

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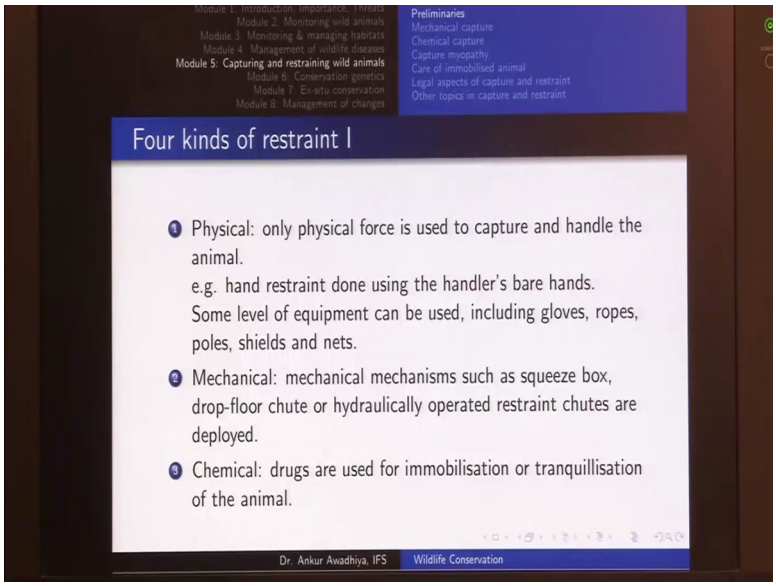

So, this restraint is a procedure involving capture in certain degree of or some degree of handling of the animal. So essentially, we have 4 different kinds of restraint. The first restraint goes by the name of physical restraint.

Now, in the case of physical restraint only physical force is used to capture and handle the animal. So, example hand restraint done using the handler's bare hands and some level of equipment can be used including gloves, ropes, poles, shields and nets. Now when do we use a physical restraint? Now for instance, if you have a dog in your home and suppose this dog needs to be given certain injections so, you might just go there and hold it, especially if it is a very small dog say, it is a puppy.

So in that case and you want to handle it, you know that this animal is cannot bite you. You know that that it is easy to handle this animal, if just if you hold it like this. So, we have healthier animal and the veterinarian has come and has given some injection, this is a physical restraint. We normally use physical restraint in the case of a number of birds and in the case of a number of small animals.

So, for instance if there is a hare or say if there is a pygmy hog. So, pygmy hog is an animal that we delft with, in the introductory two minute video. So, there we saw pygmy hogs, that are there in the pygmy hog capture breeding facility and these are small animal, these are like this big. So now, if you want to handle this animal, if you want to say put a transmitter on this animal or say if you want to give it some medicines or give

some injections or maybe if you want to clean it wounds. So, what people would do? Is just set up a trap in the form of a net trap, the animal comes and then it is captured in the net and then people can just take it out and then handle it just by holding it in their bare hands or with gloves.

So, this is physical restraint; the second restraint is a mechanical restraint. So, it a mechanical mechanisms, such as squeezebox, drop floor chute or hydraulically operated restraint chutes are deployed. So, it also uses force, because the animal is not able to break apart from this equipment, but then in place of using just bare hands, we are now moving into mechanization. So, that is known as a mechanical restraint. So, things like traps. So, basically you would have seen mousetraps in your homes.

So, a mousetrap generally kills the mouse, but then in the case of wild animals, we could go for a non lethal version of a mousetrap or see a box trap. So, that is a box and it has an entrance on one side, the animal gets inside and the entrance closes. So now, this becomes a mechanical restraint, because we are using certain amount of mechanization or some machine to deploy this restraint. So, this is mechanical restraint and we will deal with it in greater detail in the next lecture.

Next is chemical restraint. So in chemical restraint drugs are used for immobilization or tranquilization of the animal. Now in this case, what do we mean by immobilization? And what do we mean by tranquilization? So, immobilization is a technique or a phenomenon in which we have given certain drugs to the animal and now the animal is not able to move. So essentially for instance, if you have given at certain amount of Anesthetic. So, it has lost, it is consciousness and it is just lying there that is immobilization or for instance you have given it, a very strong muscle paralytic. So, even though it knows what is going on in the surroundings, but it is not able to move, it is muscles that is immobilization. Tranquilization on the other hand means a certain drug that is given to the animal to calm itself.

So for instance, if you are transporting an animal from point A to point B, you would give it certain amount of tranquilizers. So, that it is calm it does not feels any amount of anxiety. So, even if there is an animal that is feeling anxiety then it might try to bump into the to the walls of the crate or it might suffer capture myopathy or things like that, but in the case of a tranquilized animal, it feels no anxiety. So, it feels very cool and

calm. So, in most of the situation, whenever we are giving a muscle paralytic or muscle relaxing to the animal to immobilize it, we also give it certain amount of tranquilising drugs. So, that even though this animal is not able to move and it has consciousness, but then also when we are going there and we are handling this animal it should not feel any amount of anxiety.

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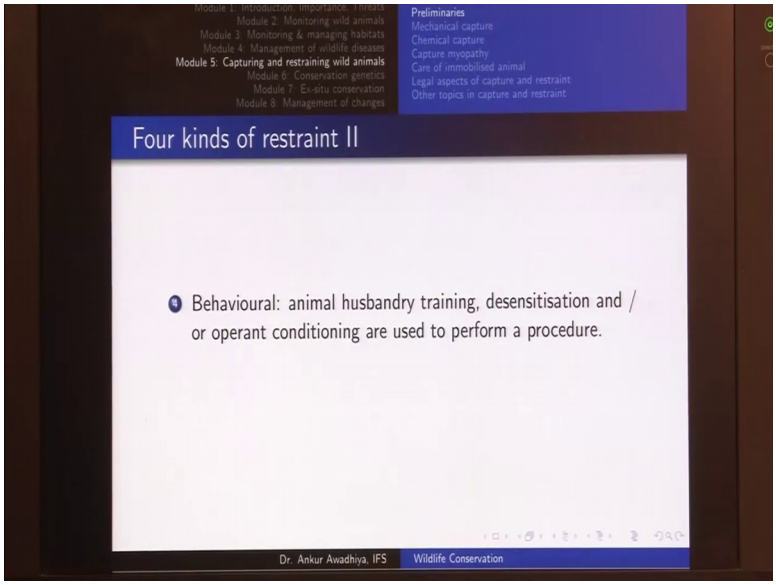

Next sort of restraint goes by the name of behavioural restraints. So, as we saw in the case of the camp elephants, in this case animal husbandry training desensitization and or operant conditioning are used to perform a procedure. Now, what do we mean by operant conditioning? So, operant conditioning is a term that comes from psychology.

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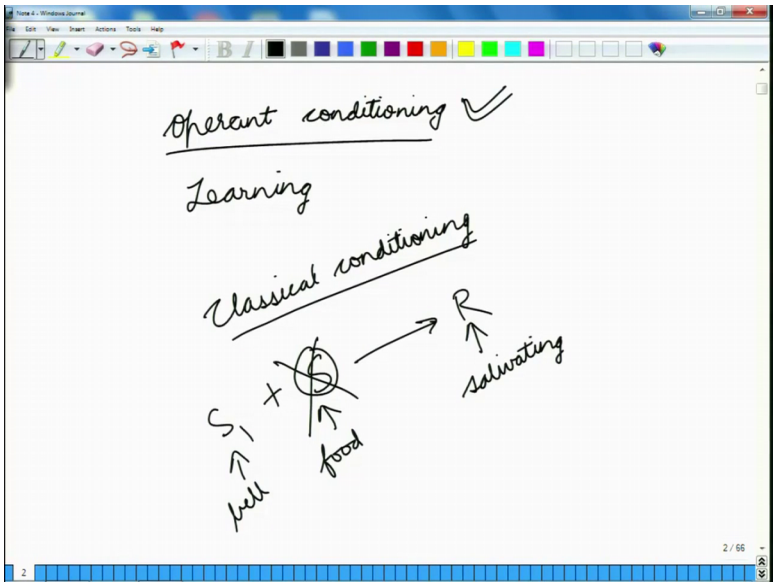

Now, operant conditioning is a type of learning, in which the animal learns to associate certain actions. So, certain behaviors with certain rewards which naturally are not related to each other. So for instance, you would have read about very classic example that goes by the name of classical conditioning. So, drill up on classical condition for a while you better understand, what operant conditioning is in the case of classical conditioning, what happens is that when an animal has a stimulus, it gives out a response. So for instance, if you have a dog and you put food in front of the dog, when it gets the smell of the food then, it starts giving out a response for instance, it will start salivating.

So, this is a natural mechanism that is normally scene in nature. So, any stimulus is associated with the response, know what we do is that we combined the stimulus S with another stimulus S 1 so, for instance ringing of a bell. So, whenever we give this dog, the food we always ring the bell along with that so, it will associate food with the bell. So, whenever there is bell, there is food, wherever there is food, there is salivation. Now, after a while, once this dog is is very much acclimatize to this sensation, you then remove the food, you just ring the bell. So, once when you are ringing this bell this dog associates this bell with the food and it is start salivating. So, that is classical conditioning, now in the case of operant conditioning, he do not have a mechanism that is seen in the nature.

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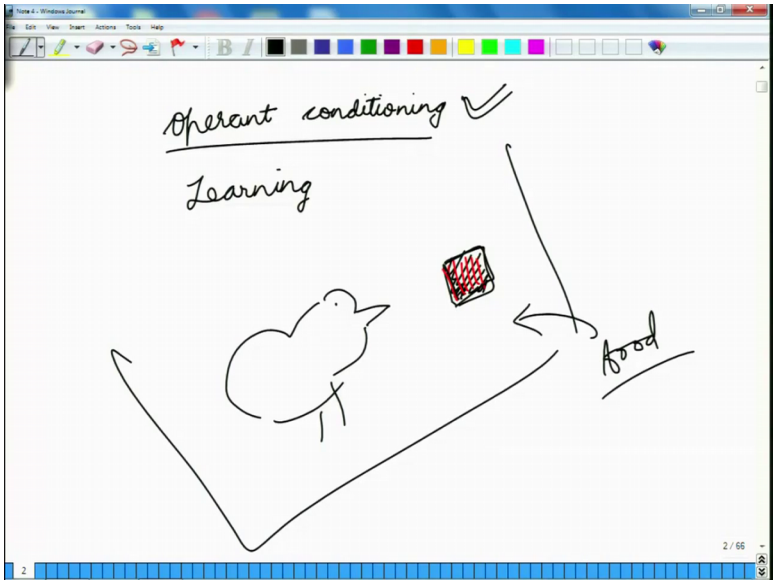

So for instance, another classic example in this case, is that you have a place on which say, let us give it a coloured space and then there is a bird. Now if this bird ever pecks on this plate. So, pecking means that if you see any bird, it would show this behavior, if this is the beak of the word it would go and just hit upon it. So, now, this is something that we normally see, when birds are trying to dominate a over other birds.

So, basically in the birds hierarchy, there would be a bird that pecks on everybody and that would be the boss and then there are some birds that are being pecked up on and they would be lower in the hierarchy. Now pecking is something that is normally seen in the birds, but then pecking of this particular piece of metal is not seen in the birds. Now what we do is that, we take a box, we keep the bird inside and whenever the bird pecks on this piece of metal, we would give it some food. Now in the first instance there would be a large size plate and the bird would say accidentally peck up on it or even see touch it at some place.

So, whenever the bird has touched this plate, we give it food then later on, we try to reduce this large size that it was smaller size plate and then we are trying to mould the behavior of the animal of the bird. In this case to ensure that any sort of touching does not help only a pecking would help. So essentially, we would try to restrain the kinds of behaviour that the bird is doing. So essentially, in the first instance there was a big plate, the bird touched it anywhere and you give it the food. Later on the plate size reduces and when it reduces, then only when the bird is touching the smaller plate, it is given the food, then later on say only when the bird is turning it is head towards or or it is touching

not through it is body, but only through it is head then, we give it the food. So, the animal learns by trial and error later on only when, the bird pecks on this plate you would give it the food.

So, the animal is learning again and again, that certain behaviours are going to be associated with the reward and then later on, when this animal has learnt that that anytime it is going to peck on this plate at would get the food, then we would see that this bird is continuously or regularly pecking on this plate. Now this is a behavior that is not seen and nature; birds do not go randomly and peck on any metal plate, but then just because you have associated it with certain amount of a reward or it could even be a punishment and certain situations. So, a reward and punishment that is now moulding the behavior of the bird. So, that it gives you a certain behavior, that you want it goes by the name of operant conditioning.

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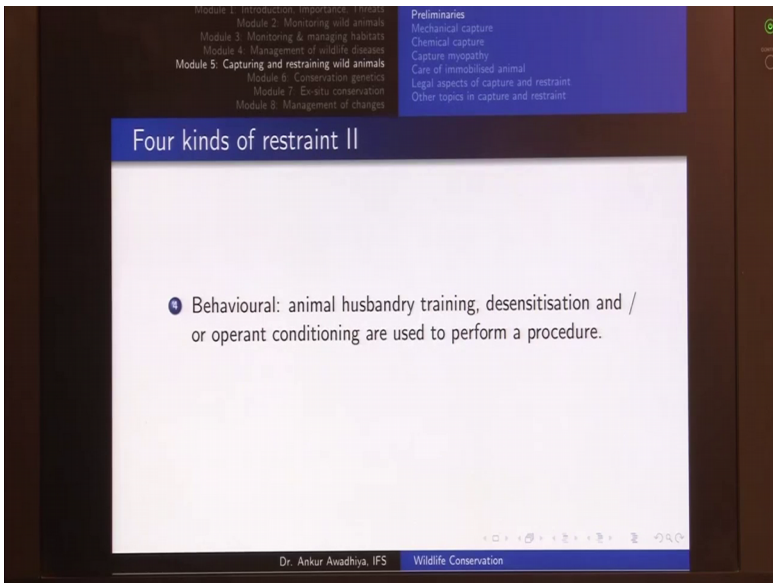

Now coming back to the slides, in the case of behavioural restraint, you have animal husbandry training desensitization and or operant condition are used to perform a procedure. Now what sort of operant conditioning would be there in the case of our elephant.

So basically, you could have a situation that whenever there is a veterinarian and it comes close to the elephant. So basically, we could have a veterinarian that is distinguished by say white colour coat. Now when anybody in with a white colour coat

comes and approaches the animal and suppose it comes to the right fore leg than the animal should raise this leg. So, that the veterinarian is able to inspect it. So, now, such kinds of behaviours can be taught to the animal using operant conditioning.

So, basically you whenever anybody is whenever any person to the white coat is approaching this animal and this animal is yet untrained, whenever it moves it is legs even slightly then, we would give it some certain amount of treats. Then later on when this animal moves it is moves it is legs much more then, will give it a treat then later on only when this animal holds it is legs, it is 4 legs, say for a period of say 30 second, we would give it a treat, then later on we would even mould this behaviour further, whenever anybody approaches and this animal lifts it is legs and then holds it for say 2 minutes, it would be given a treat.

So, once you have given all these sorts of trainings to the animal, before a situation has a reason. So, all these trainings have been given, before this animal ever got an injury in the foot or rot in the foot or any disease in the foot. So, once you are given all these sorts of behaviours, now later on whenever the veterinarian comes the animal would instinctively just hold it is leg for a closer inspection and maybe for treatment.

So, in such situations we would not require any amount of force, we would not require any sort of mechanical device, we would not need to immobilize the animal, but just with this behavioral training, we would be able to restrain the animal and handle this animal.

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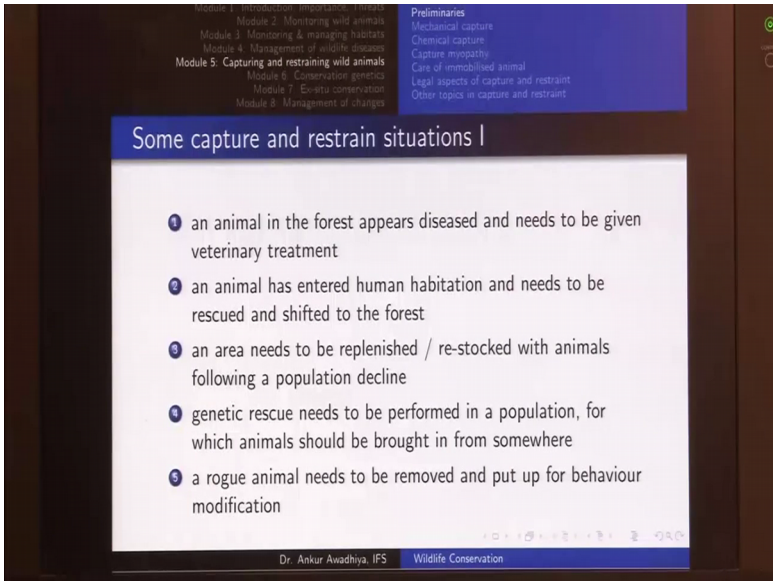

So, this is known as behavioural restraint. Now, when do we need to use this capture and restraint procedures. So, we have a number of situations in which we could have a capture and restraint that is required. So, an animal in the forest appears a disease and needs to be given a veterinary treatment. So, you went into the forest and you saw a tiger that was having some injury or it was having some disease. Maybe it was not able to feed properly, maybe it was having a wound somewhere and now you think that this animal needs to be given a veterinary treatment.

So, you would capture this animal, you would restraint this animal so, as to be able to give it the treatment. Next an animal has entered a human habitation and needs to be rescued and shifted to the forest. So basically, you have say a leopard that came into the village and then this leopard went inside the house, the person inside the house went out locked the door and now the leopard is now inside human habitation, it is inside the house. So, you need to rescued this animal and then shift it back to the forest. This is another situation that would require capture and restraint.

In most situations, we normally immobilized animal with dart and then when it is lost consciousness, we go and take it out, put it into a cage transport it into the forest and then release it, after giving it drugs so that, it regains the consciousness another example is an area that needs to be replenished or restocked with animals following the population decline. So for instance, a few days back we had tigers that had to be moved from Bandhavgarh Tiger Reserve and Kanha Tiger Reserve in to Satkosia Tiger Reserve in Odi-sha.

Now, Satkosia Tiger Reserve had a decline in the tiger population, it did not have sufficient numbers of tigers, it needed more tiger. So, then we capture and restraint tigers from other national parks and then transport them and then release them into a national park that has suffered a population decline. So, this is another situation where we require capture and restraint in this case also we went for a chemical restraint. Next is genetic rescue needs to be performed in a population for which animals should be brought in from somewhere. So, in this situation you have animals in your protected area, the number of animals is sufficient, but all these animals are now related to each other. So, basically you might be seeing situations of inbreeding or inbreeding depression.

So in this situation, we would require genetic rescue that needs to be performed and you are also, you would need to capture animals from somewhere else and then bring it to your population that needs to be rescued. Next is a rogue animal needs to be removed and put up for behaviour modification, a classic example is that, in the case of elephant reserve, we could have situations in which there is an elephant, that is regularly coming and raiding the food crops or the farm lands in the nearby area. So, even though this animal has food inside the forest, but this animal is coming out and is (Refer Time: 23:34) on the food crops in that case, to reduce the situations of conflict, now this animal would need to be removed and put up for behaviour modification.

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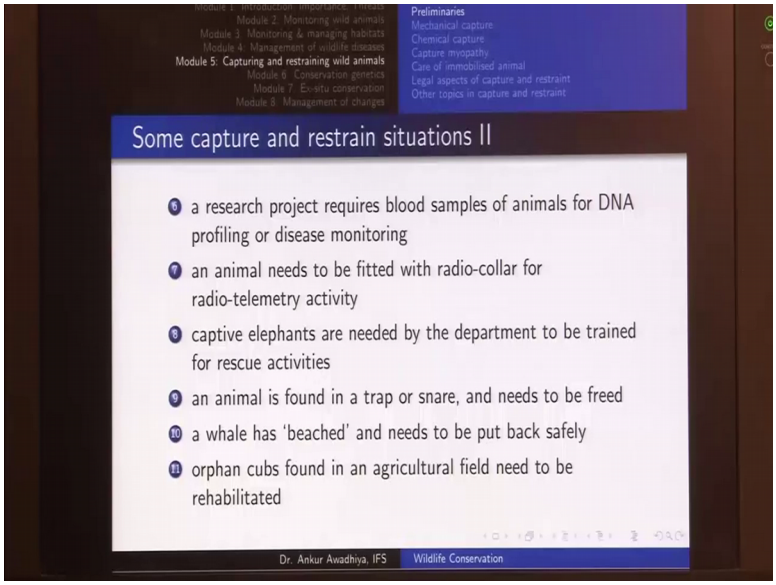

So, in this case this animal would be taught that, it should not come out of the forest. Other situation is when there is a research project that requires blood samples of animals, for DNA profiling a disease monitoring.

So here, also if you want a blood sample from an animal, it may be required to capture the animals to restrain, the animal to take out the sample and also the disease monitoring. Next is an animal needs to be fitted with radio collar for radio telemetry activity. So, this is something that we observed in our second module. So, there was a tiger that had a radio collar fitted on it.

Now once, you have an animal that has a radio collar fitted to it is neck, then it is extremely easy to track that animal, but then how do you put your radio collar there in

the first place? So, this is our classic question of who is going to bell the cat? So, here also you have a cat, a tiger that needs to be built with a radio collar. So, in this case also we go for a chemical immobilization and then when the animal has lost it is consciousness, we put the collar and then we give it drugs. So, that it regains the consciousness. So, this is another situation, we should warrant a capture and restraint of the animal.

Next is captive elephants are needed by the department with trained for rescue activities. So, in this case also we would go and capture certain elephants. Now earlier, capturing of elephants from the forest used to be done very regularly, but these days, because from we have reduced a departmental activities and also because our outlook has changed, we normally do not go into the forest and capture the wild elephant, but we only use those elephants that are showing our own behaviour or that has getting into conflicts. So essentially, like there is an elephant that comes out of the forest, raids the crop plants and has even killed a few human beings.

So, then to reduce this conflict, we could either terminate the animal or preferably we try to, to capture this animal, try to rehabilitate it somewhere in the forest, even if that thing does not work even after rehabilitation, it is always coming out and getting into a conflict situation, then we will take this elephant out put it into are one of our training camps and then use it as a departmental elephant or a camp elephant. So, when capture the elephants are needed by the department to be trained for rescue activities this would also required certain degrees of capture and restraint.

Not only to capture this elephant out from the wild situations, but also when we are keeping it in a (Refer Time: 26:14) for training activities, in that is also a mechanical capture that is being used. Next is that you have found an animal in a trap for a snare and this animal needs to be freed.

So, we normally observe that in the forest areas, we could be having poachers in certain situations they could even be locals that are going out into the forest, in one want to track an animal just for it is meet. So, they could have put up as snare out there in the forest. So, a snare could be something like a clutch wire, that is put up as a (Refer Time: 26:45) in then, that is kept in one of the shrubs. Now when any animal tries to move past it, it

would put it is head into this snare and then this snare would be tightened up, because it was attached to one of the trees nearby.

So essentially, your animal would be trapped there. Now suppose, you went into the forest and we saw one such animal that was trapped or say you saw a tiger that had one of these is snare was across it is body, may be in it is abdominal portion of maybe in it is neck portion. Now whenever you find such situations and these animals need to be rescued, we normally go for a chemical immobilization of the animal. So, we shoot it with the dart, when the animal goes down, when it is immobilized we go there, we remove this snare bare of the trap and then we also give it certain amounts of medications, certain antibiotics and then we give it drug. So, that it regions consciousness and so, this animal is now rescued and is freed from the trap or the snare wire whatever.

So, these situations also required captured in restraint. A whale that has beached and needs to be put back safely, what is beaching of a whale? It means that there was a whale that move at a very fast speed and then it came on top of a beach. So now, whale for animals that live in the oceans that live in the seas and when you have a whale that is there on your sea beach. It is being exposed directly to the sun, it is it is drying out very fast and if nothing is done then this animal might even die.

So in these situation, when we want to rescue these whales, we might make use of physical force. So, we might say bring in some cranes or maybe some bulldozers and you try to push it back into the ocean to save it is life. Now this is another situation, that required certain amount of captured and restraint. Now restraint might also be required, because whenever we deal with such situations, we try to mark this animal and also try to take some samples out of it for scientific study. Next you have situations, where orphan cubs are found in agricultural field and they need to be, they need to be rehabilitated. Now what do we mean by orphan cubs? Now we have observed that in a number of situations, we would have tigers, lions and leopard that have their cubs out there in the agricultural fields. So for instance, fields of a sugarcane are generally preferred by these large cats.

So, there was a mother that had it is cubs out there in agricultural fields. Now the agricultural season is over and now people have come and they are trying to cut this

sugarcane fields. Now when so, when there are a large number of people and machines out there in the agricultural field, the animal might feel stress, it might feel that it is cubs are and danger or it is own life is in danger. So, the animal might first fight to relocate the cubs. So, it might just pick up it cubs and take them away, but if there is a situation when the mother had gone out for hunting and then when she comes back she observed that that there are so many people and machines that are there working on the field.

So, it might even abandoned the cubs. So, we have situations in which we have found abandoned tiger cubs abandoned, leopard cubs and these cubs, they need to be rescued because, once their mother has abandoned them, they are going to die in a very short period of time, until and unless we make a manual intervention, a human intervention there period this we take this cubs out and then rare them and are facilities give them milk, give them certain food and maintain them. So, that their able to lead their lives. Now these situation should also required that these animals, these small cubs is give means are actual restraint and then given food given certain amounts of training.

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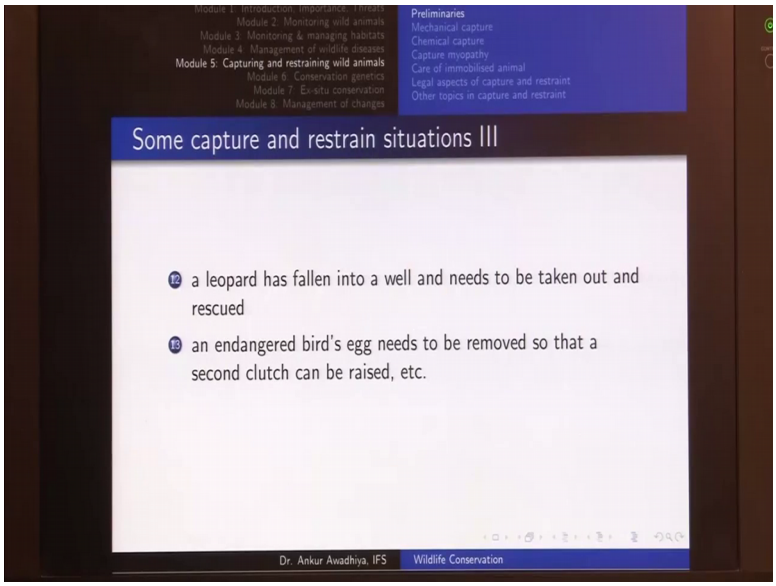

So, this is also another situation that would warrant, captured and restraint, then we could have situations in which a leopard has fallen into a well, know this is something that we very commonly encountered out there in a field situations.

So, there are a number of wells, that do not have them manifests on their top. So, it is very easy for an animal to fall inside and we have seen and number of situations in which

leopard falls into the well and now this leopard needs to be taken out and rescued otherwise it is going to drown there and die.

So, in these situation, he could either make use of bamboo poles or bamboo staircases, if this leopards is this still in a good condition and would be able to come out of the well by itself, but if this leopards is already showing signs of hypothermia or this leopard has been there in the well for quite some time, it is completely exhausted, then we might even need to use traps. So, we would use a mechanical trap to capture this leopard and then take it out and rescue it. So, this is another situation that would require capture and restraint also in situations where there is an endangered birds at that needs to be removed so that a second clutch can be raised.

So in this situation, there are a number of birds that show parental care and if there is an egg there in the nest, it would not raise a single clutch. So then, we might need to take this egg out put it into our facilities. So that this egg is raised through a artificial incubation and the bird raise is another clutch. So, that the population grows.

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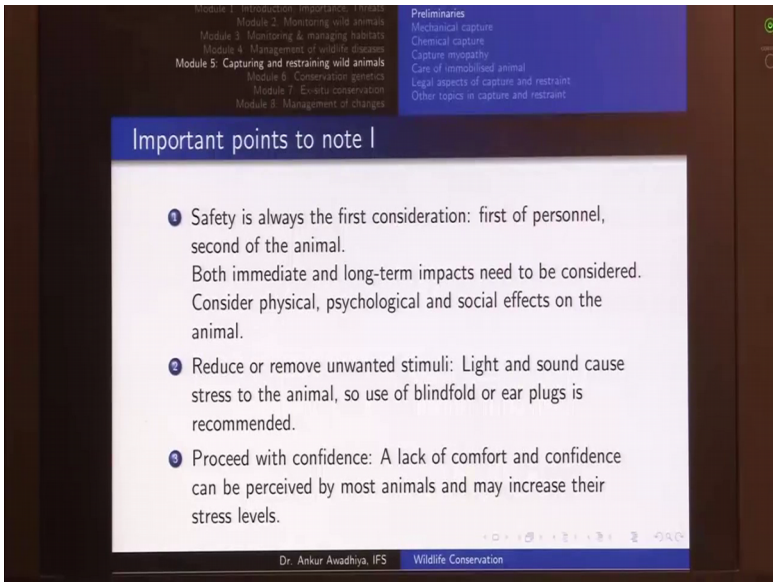

So, this is also another situation, Now, there are certain points to note, whenever we are going for a capture and restraint situation. One, safety is the first consideration, first for the personal and second for the animal.

So, whenever you are out there in the field and you are trying to rescue and animal, first of all you need to ensure that all your personal, all the people that are there in your team, they are safe. Second the animal is also safe, both immediate and long term impacts need to be considered and you also need to consider physical, psychological and social effects on the animal. So essentially, be safe that the least amount of restraint that is applied to an animal is the best restraint, because whenever you are putting an animal into any sort of restraint situation, if you have put it into a box, then it might suffer certain amounts of stress. It might even get into some psychological problems, but if you give it the least amount of resting.

So, that you are able to perform your activity without putting this animal into unwanted amounts of pressure, in that is the best restraint that could be used. Second, reduce or remove unwanted stimuli light and sound cause stress to the animal. So, use of blindfold or ear plugs is recommended. So essentially, whenever you have trapped your animal. So for instance, you went for a mechanical trapping of the animal. So, you set up a mechanical trap out there in the forest with some with certain amount of (Refer Time: 33:40) and then animal came and I got trapped, what is the first thing that you should do? The first time is that you should cover this trap.

So, that this animal is the not able to see outside, because any amount of visual stimuli that this animal gets, if I get this feeling that it is being taken to some other area, because we have a locating this animal. So, anyhow such stimulus is going to give it stress, you should also try to reduce the amount of sounds stimuli that other. So, essentially we have observed that in a number of such situation whenever we are capturing an animal, we would find a huge mob that has come into the surroundings, everybody tries to have a selfie with the tiger or a selfie with the leopard and everybody is chatting there, making loud noises, laughing.

Now, all these situations are given quite a huge amount of stress to the animal and all of these things need to be avoided. Next proceed with confidence, a lack of comfort and confidence can be perceived by most animals and may increase their stress levels. Now to give very similar example, when we were having horse riding training in our academy, we were told that whenever you are there on top of the horse, even if you do not know horse riding, you should to hold the straps of the horse with quite a lot of confidence. So, the animal should not know that you are on a novice in the field, that we would do not

know, how to handle the horse? Because if the animal understands that you are on a novice, then it might even feel stress, it might feel that that this is one person, who does not know anything and is handling me.

So, he might even give me a certain half, but then if you proceed with confidence, the animal also gets certain amount of calmness and it is in itself, because it knows that that you are somebody, who knows what he is doing. So, you always need to proceed with confidence.

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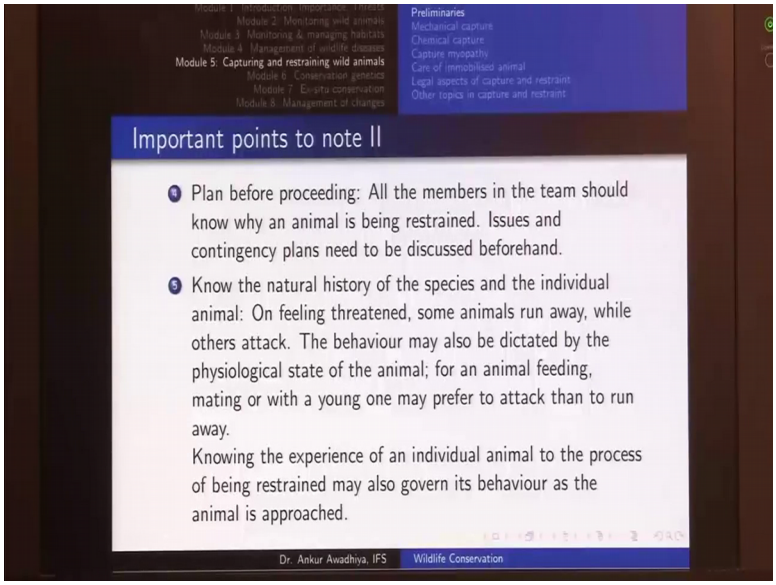

Next plan before proceeding so, we normally say that feeling to plan is planning to fail and this also is extremely true in the case of capturing and restraining of animals. All the members in the team should know why an animal is being restraint and issues and contingency plans need to be discussed beforehand. So basically, you cannot go out there in the field and you do not know what you are going to do the fit this animal. So, you say for instance, you put up a foot trap for the animal.

So, whenever this animal put it is foot into this trap, it gets caught. Now you had for instance, you had thought that this animal is going to put it fore foot, but then in certain situations you find that you went out there in the field and you found that the rear foot of the animal is out there in the foot trap. Now this situation is something that you do not know beforehand or maybe you did not foresee it, before you have not planned for it before.

So, now if you do not work properly you might even give the animal certain amount of fractures so, which is why you need to plan a lot before proceeding. Next know the natural history of the species and the individual animal, now on feeling threatened some animals runaway by others attack. Now this might be a species dependent behavior, this behaviour me also be dictated by the physiological state of the animal for an animal feeding, mating or with a young one, may prefer to attack then to run away.

So essentially, whenever you are going out there in the field, you should know that if you are say going for a chemical immobilization of the animal, if this animal having a tendency to run away or this animal having a tendency to attack you, now meant experience of an individual animal to the process of being restrained, may also govern the behaviour as the animal is approach. So, a classic example is that of our camp elephants, if you find an elephant out there in the forest, if there is a wild elephant, the common advices never approach the animal, because elephants are extremely dangerous animals, they might even if they just try to hold you with their trunks, he might die because they exact a huge amount of force through their body.

Because their large size animals, but then if we talk about a camp elephant, it knows what it means to be captured? What it means to be restrained? Because it has undergone all these desensitization training for so long, that now it is safe to approach this animal.

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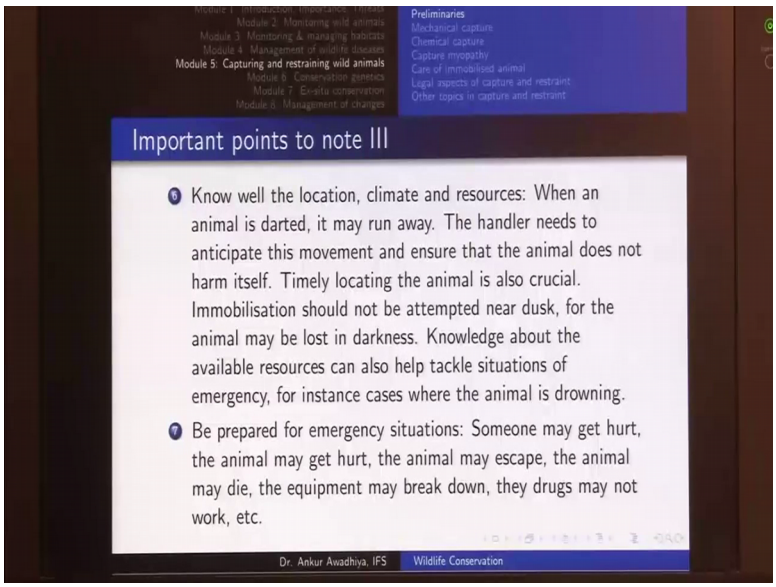

So, the experience of the individual animal also counts. Also know when the location, climate and the resources, when the animal is darted it may run away. Now the handler needs to anticipate this movement and ensure that the animal does not harm itself, it does not go into a water pond and then say it down itself. So, we need to note the area in which you are operating very clearly, then timely locating the animal is also crucial, immobilization should not be attempted near dusk for the animal maybe lost and darkness. So essentially, you darted on an animal, it ran away, it was close to dusk. So, very soon we had a nightfall and then we did not see this animal, this animal got lost in the forest and then say after a while these drugs, because they take some time to act.

So, this animal lost consciousness out there in the forest, it might even die, it might even be attacked by other predators and so that would become a lost case. So, which is by immobilization should not be attempted near dusk. Knowledge about the available resources can help tackle situations of emergency. For instances cases, where the animal is drowning. So, basically we should also know, what are the other resources available to us? Do we have any cranes in the surroundings? Do we have any wool do this in the surrounding? That we might use then also be prepared for emergency situations, someone may get hurt, the animal may get hurts, the animal may escape, the animal may die, the equipment may break down, the drug may not work, even your equipment may not work, the trap fields.

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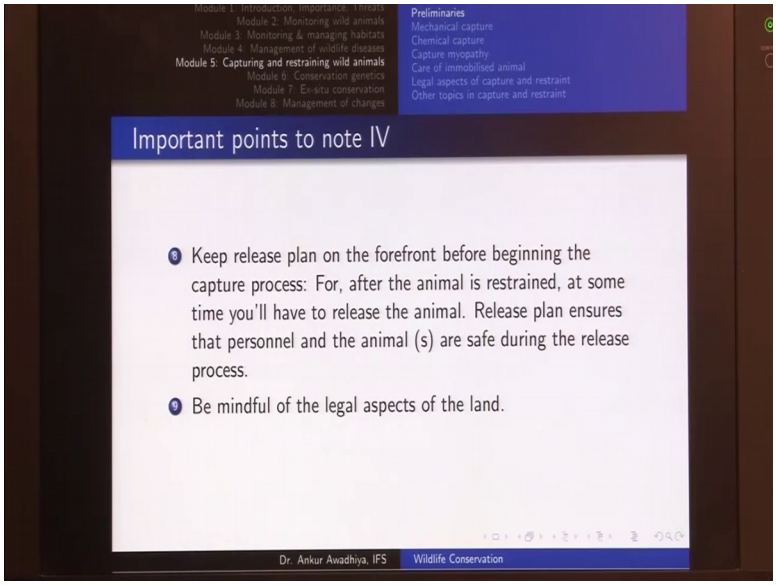

So, we could have a number of emergency situations and all of those need to be repeat for. Next keep a release plan on the forefront, before beginning the capture process, because whenever you are restraining an animal after some time, you are going to release it. So, why not keep the release plan out there in the front.

So essentially, if you have captured the tiger. So, once you have operated on this tiger, are you going to release it in the forest? Are you going to release it in a zoo? Are you going to release it in a captive breeding facility? If you are going to release it in a zoo, does it have sufficient amount of resources, that you would be able to bring this tiger?

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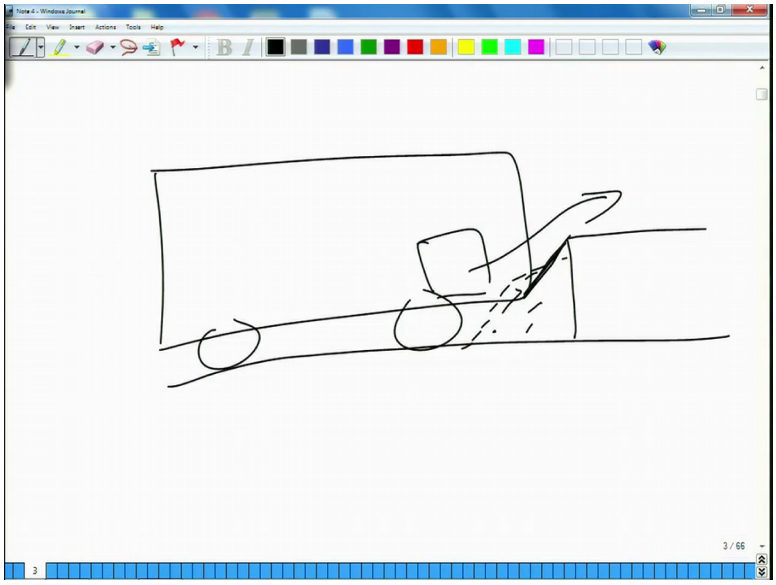

So, a common situation that occurs in the field is that we have the animal in a truck and then when we go out there in to the zoo, we find that if this is the ground level, this zoo has an entrance that is it this side. Now how do you take your animal from this truck up to this side? Do you put a piece of plank like this so, that you can push your crate out there into this area? Or maybe it would have been much better, if before proceeding to this place, you had place certain amount of mud into this area. So, that it becomes a more easy ramp. So, things like these have to be planned for before, we are bringing the capture process and also be extremely mindful of the legal aspects of the land.

So essentially, people who do not have training in this matters, should not approach an animal or else you will get in a very terrible legal soup, because if you are having an animal, if even if your handling an animal, even if you are capturing an animal and a

number off of situations, it may be equated to hunting as per the provisions of our wildlife protection act 1972. So, in this case be extremely mindful of the legal aspects of the situation. So, that is all to today.

Thank you for your attention. [FL]