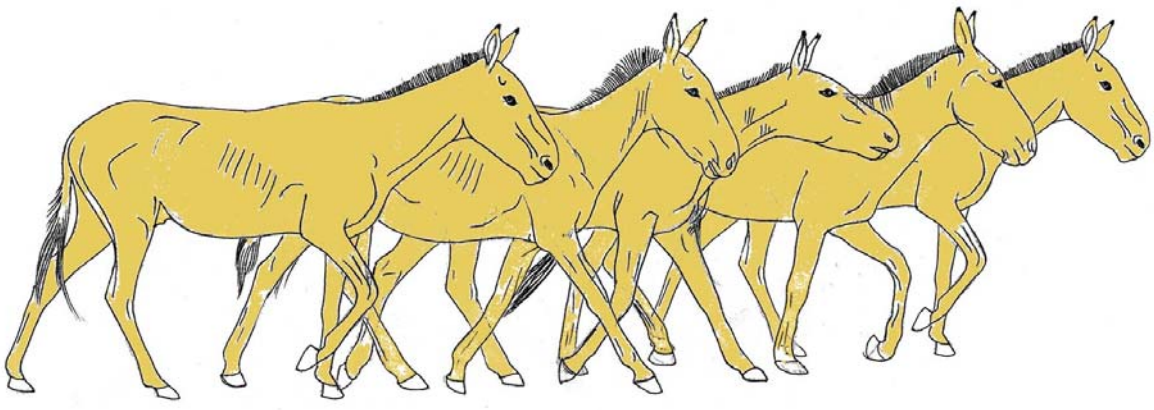
Landscape level research for the conservation of Asiatic wild ass in Mongolia

Reports October 2006



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A concept for environmental education of children in the Great Gobi B SPA

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1. General Situation

At the moment there are almost no activities concerning environmental education in and around the Great Gobi B SPA. The only exception is one excursion a year organised by the Takhi Camp, where the pupils from the surrounding schools are taken out to visit the Strictly Protected Area. The schools themselves are not able to take out the pupils for a trip due to lack of funds. Moreover they miss books about nature and environment to work with. In addition, many of the children do not own scissors, glue, coloured pencils etc. There is no person in the park administration that is responsible for environmental education.

2. Topics for environmental education

These topics and general structures were outlined by Petra Kaczensky.

What shall be taught?

1. The great importance of the area for the conservation of species
    - Big diversity of plants and small mammals
    - Last big populations of Asiatic Wild Ass
    - Reintroduction area for the Przewalski's horse
    - Also predators like snow leopard and wolf are important parts of an ecosystem
2. Goals of the Strictly Protected Area
    - Conservation of species and processes
    - Conservation and support of the traditional land use (half-nomadic livestock herding)
    - The area can only be conserved when Park and local people work together

3. The conservation of the area and the traditional life-style of the local people can only be maintained when natural resources are used in a sustainable way.
    - Pasture management (too many livestock lead to over-use)
    - Use of shrubs as firewood (over-use of Saxaul leads to erosion; dung and coal as alternatives, better stoves need less and save time to collect wood or dung)
    - Increasing poaching leads to a severe reduction of wildlife populations in most parts of Mongolia -> following generations will not be able to use wildlife as a resource and will miss the species as a traditional part of the landscape and region (Przewalski's horse) -> is an empty steppe desirable? Livestock attacks by snow leopards and wolves increase because other prey is missing.
    - Waste as batteries, oil and chemicals are not only ugly but also very dangerous, they can poison the few water points for a long time so that the water cannot be used by humans, their livestock and wildlife; plastic bags are dangerous for wildlife and livestock when they are eaten, alternative at the moment: collect the waste at a central point, burn the plastic

3. Goals of environmental education

The goals of environmental education are not to tell people what to do, but rather to help them understand how to handle resources and nature in a sustainable and sensible way. People shall be able to understand that they depend on nature and that every extinction of a species or spoiling of the environment will concern themselves. They shall not only listen to explanations but shall experience on their own, e.g. by games, observations, research etc. Probably people are willing to pay attention to some topics and will refuse to accept others. It is more likely to get acceptance for topics that concern people directly, e.g. poisoning of water points by waste, or that people

appreciate, e.g. Przewalski's horse. Other ideas like the conservation of the wild ass will be more difficult to give to local people, because they would not feel any direct consequences if the wild ass got extinct. In this case one must try to get people to appreciate the species itself or at least to accept its place in the whole ecosystem. The base for most of the environmental education is the ecosystem concept: it is important to understand that all living things are connected and depending on each other, so that it will have consequences for all the others when one species disappears. Moreover it is important to make people understand that their actions influence nature and that they are responsible for them.

5. Target group

The most important target group are the local children, they should learn about nature and environment, why and how to protect and conserve it. They should be brought to appreciate and accept it. But it is also important to involve the adults in an environmental education concept. There will be no sense in teaching the children when the parents do not accept or know about these ideas. For example the children will not be able to understand why it is important to protect the wild ass, when they are told the opposite by their parents. In addition it could be a good idea to have some offers for tourists, too.

6. School interests (information by the school director in Bij)

The pupils have one lesson per week, where they learn about ecology and endangered species. Due to the trips that are organized by the Park once a year, the pupils know about the work of the rangers in the Strictly Protected Area. Generally most of the children are interested in biology and wildlife except for some that do not see the use of it.

The school would be interested in doing some project work (some days or one complete week) about one animal or a subject, e.g. the wild ass or “what is an ecosystem?”. For this the teachers need books and theoretical materials, maybe it would be sensible to have one of the rangers to help out at school during the project work. To do some handicraft, utensils like coloured paper and pencils, glue and water-colours are needed. It could also be interesting to make an excursion to the Park, e.g. when the project work is made about the wild ass. The children can observe wild asses and their behaviour, they can learn about the research that is done (telemetry), etc.

The school is also interested in coming to Takhin Tal more often (maybe twice a year) or to make a 2-3 day trip to the Takhi Camp, best times would be spring and autumn. If there is no possibility to take the pupils to the Takhi Camp it could also be an option to send a ranger to the school instead. Themes could be the wild ass, Przewalski’s horse, plants, etc. Wildlife could be observed, posters could be made, games can be played or pictures could be painted. Maybe this could be connected with the study programme of the pupils. They have a subject called “study of the landscape”, where the children learn about their region, e.g. soil structure, humidity, plants and animals. The excursions could help to illustrate and reinforce the contents of this subject on the spot.

Fig. 1: School in Bij.

The director also thought that the children would be interested in "wildlife clubs", which would take place voluntarily in the spare time. A "wildlife club" must consider the interests and wishes of the pupils. One or more rangers from the Takhi Camp should be responsible for the "wildlife club" and meet with the interested pupils every other week or once a month (depending on the interests and possibilities). The children can decide which animal or topic they want to study. The ranger should provide the materials and utensils, help the children to research, observe and study, take them out in the Park or give them some ranger work (e.g. build a fence) to help with. In the "wildlife club" the children shall not be taught about subjects as at school. They shall choose the topics depending on their interest and study or research them on their own. The ranger shall support them, answer questions, come up with ideas and provide material.

7. Ideas for environmental education

1. Great diversity of plants and animals:

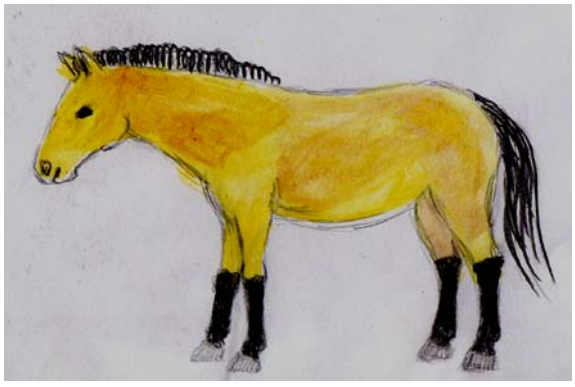
- The children can be asked to estimate how many plants/animals live in the Gobi B. They can say which plants and animals they know and make a list of them; teacher/ranger can complete the list (with the more important species).
- Children can compare how many species are special to this area and do not occur in other parts of the world (Asiatic Wild Ass, Przewalski's horse, small mammals?, plants?).
  - "*Wanted" Posters*: children can choose some species to make "wanted" posters (Mongolian/Latin name, family, life expectancy, reproduction, behaviour etc.) with pictures. They can design posters about one species or about the most special plant species or small mammals or endangered species with names and pictures and short descriptions.
  - *Map Plants*: children can map plants, classify and paint them (by that they will look in detail at the plants).

2. <u>Knowledge of endangered species:</u>

- Looks (pictures, maybe preparations like fur, skeleton,…)
- History (historical distribution, when did it become endangered, what were the reasons?)
- Distribution -> draw it on a map
- Ecology (food, reproduction)
- Behaviour
  - *"Wanted" Posters*
  - *Puzzle*: a picture of the animal is cut in several parts so that the children need to fit the parts together to get the whole picture. On the backside of the puzzle parts do descriptions of the animal (looks, behaviour, life expectancy,…) help the children to fit the right parts together.
  - *Who am I*? (*see Fig. 2*): pictures of different animals are taped on the backs of the children, so that every child can see all pictures except for the one on its own back. By asking questions that shall only be answered by "yes" or "no" the children shall find out which animals they are (e.g. Am I big? Am I brown? Do I have a tail? – but not: What is my colour? Where do I live?).
  - *Animal Riddle*: ranger/teacher starts to describe an animal (e.g. I have four legs, I have brown fur,..). After each sentence the ranger/teacher makes a break to let the children think. They have to guess which animal is described. To have more fun the child that has guessed the animal can get a reward (e.g. it is allowed to think of another animal and describe it).

Fig. 2: Who am I?

Species postcards are fixed on the backs of the children



Examples for species postcards: Przewalski's Horse and Wild Ass

*a) **Endangerment of Wild Ass***

- Excursion to a water point where the children can observe wild asses.

- *Population Game*: a group of children is divided into wild asses and poachers. The poachers have to catch the wild asses. -> If the wild ass population is big and there only are a few poachers, the poaching does not have a deep impact. -> If the wild ass population gets smaller and the number of poachers increases, the poaching will lead to the extinction or an immense reduction of the population. Rules: if a poacher-child catches a wild ass-child the wild ass is killed, but the remaining wild asses do still reproduce, so that foals are born -> e.g. the eliminated wild asses can return into the game as new born foals (teacher/ranger must find a rule, e.g. every minute two new wild asses can join the game again).

  Goal of the game is that the population stays in equilibrium with only a few poachers, but decreases rapidly with more poachers. -> Children shall understand that an increase in poaching endangers the population.

  -> If the poaching of wild asses cannot be reduced, they will get extinct like the Przewalski's horse did in the 60's. Extinction of the wild ass means extinction in the whole world (compare to distribution map).

- *Role Play*: a group of children is divided into different groups of interest:

  * Wild Asses
  * Government
  * NGO's
  * Nomadic herders
  * Poachers
  *…..

  The different groups shall think of their position, they shall try to find out and understand the arguments and interests of their group. They have 30 min. to work on their argumentation then they should come together and try to find a solution to their different perceptions and interests (e.g. the wild ass does not want to be shot, but wants to live, the government and the NGO's want to

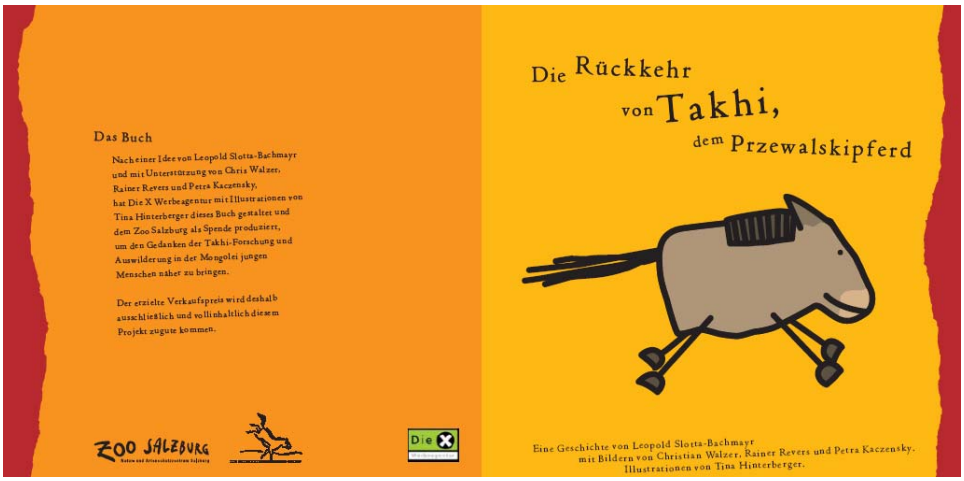
conserve the wild ass, the nomadic herders fear a competitor to their livestock and the poachers want to get money). Maybe they find a solution, maybe they do not. If not, the teacher/ranger can try to collect all arguments and find a solution together with the children (maybe to allow a restricted number of legal hunting).

-> The children shall understand that there are different perceptions of a situation and a problem (not only the herder perspective they know) and that it is very difficult to find a good solution to all interests.

-> Cannot be played with young children, children have to be 12 years at least (maybe it is possible to try 10 or 11).

b) <u>Reintroduction of the Przewalski's horse</u>

- History of extinction and reintroduction
- Read book about "The return of Takhi, the Przewalski's horse"
- Visit the horses, show the enclosure, the transport boxes
- Talk about some research projects, explain telemetry
- Talk about some figures: how many horses have been reintroduced? How many did survive? How many foals were born?, etc.
  - *Population Game* (compare Wild Ass): how could the Przewalski's horse become extinct? Is the current population big enough to survive wolf attacks and/or stochastic climate fluctuations (very cold winter, hot and dry summer)?

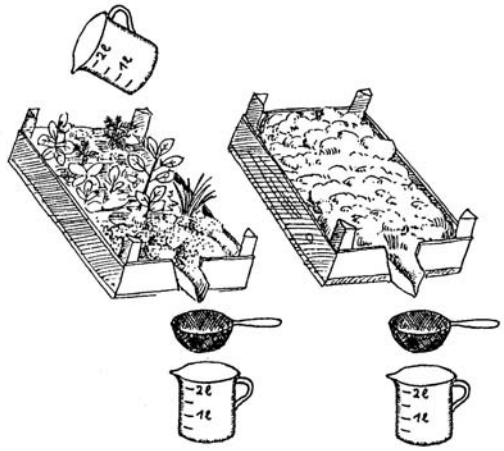


The return of Takhi the Przewalski's horse [German editiona]

3. Sustainable use of resources

- Hunting -> see *Population Game*: there is an animal population (e.g. ibex) and an increasing number of hunters. What does happen to the population? -> It becomes extinct or decreases so much that it cannot be used as resource any longer.
- Pasture management -> here, too, the idea of the *Population Game* can be used: a group of children is divided into grass and livestock. The grass-children spread over the field and then stay at their spot. The livestock-children start to graze the field, i.e. when a livestock-child touches a grass-child the grass is eaten and the grass-child will squat. The teacher/ranger will go around the field and touch the grass-children so that the grass grows again (they can stand up). -> The more livestock there is the slower grows the grass, is there too much livestock there is not enough to eat for the animals.
- The children shall understand that it is better to have few animals on a pasture so that all have enough to eat, than too much so that there is not enough grass. They shall learn that it is not sensible to over-use a pasture because then the grass will take longer to grow again.
- Saxaul Management -> the same game as for the Pasture Management can be used: here, the grass is the Saxaul and the livestock is replaced by humans collecting Saxaul. It is the same principle, when it is over-used it cannot grow again fast enough and the resource cannot be used for some time.
- Alternatives can be named and discussed: dung, coal, better stoves (a good stove can be demonstrated to show the children that it saves firewood).
  - *Erosion*: concerning the Pasture and the Saxaul management the problem of erosion can be examined and studied. It can be illustrated by paintings or by an experiment (*see Fig. 3*): we have two boxes, one with bare sandy soil and one with planted sandy soil. The boxes are put in an angle of 45° and water (2 l) is poured over them. The water flows through a strainer and is collected in a jar. The soil in the box without plants will erode more than that in the box with plants and come in the jar dirtier and quicker than the water from the box with plants (one could also think of trying to simulate wind erosion by blowing over the

boxes). -> The children shall understand that erosion occurs when plants (grass/shrubs) decrease by over-use and that erosion is a problem because it takes away the fertile soil (to understand this it would be good if the children already knew about ecosystems and decomposers).



2 l of water are poured over two boxes in an angle of 45° (one with bare sandy soil and one with planted soil)

Fig. 3: Erosion.

4. Ecosystems

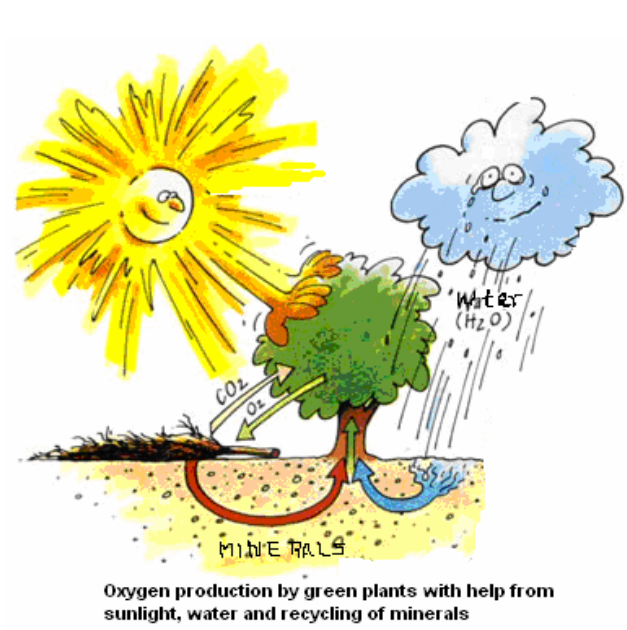
- To explain the ecosystem it is best to illustrate it by a painting
- The children should understand that there are different levels in an ecosystem (producers, consumers and decomposers), the motor of the complete system is the sunlight
- The children can realize that there are very important but small animals (the decomposers) which are of immense importance for the ecosystem
- The idea of an ecosystem can lead to a better understanding of the role of predators. -> What is their place in an ecosystem? Why are they important? (e.g. elimination of sick, old or genetically disadvantaged animals).
  - *Structure of an ecosystem (see Fig. 4)*: different parts of an ecosystem are handed out to the children (paintings of sun, grass, wild ass, wolf, beetle etc.).

They shall arrange and connect them in the correct way (sun lets plants grow, wild ass eats plants, wolf eats wild ass, beetle eats rests of dead plants/animals and dung).

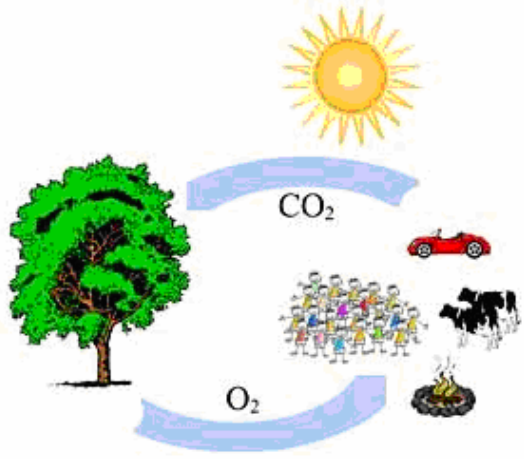
- *Role of humans in an ecosystem*: the children shall try to place and connect humans in the ecosystem. At which level are humans? What is their role?
- *All do depend on each other (see Fig. 4)*: children and teacher/ranger stand in a circle. Everybody has an animal picture taped on the chest (game can be played following after *Who am I*?). The teacher/ranger has a ball of cord and throws it to a child, so that both of them are connected by the cord. Then the connection between these two living things is explained, e.g. the teacher/ranger is a plant and the child is a wild ass. The connection is that the wild ass eats the plant, or the other way round, that the dung of the wild ass provides the plants with nutrients. The child throws the ball to another child and again the connection is explained, etc. In the end there is an entangled network of cord. -> The children can see and experience that all living things depend on each other and every thing has a function for another one.
- Variations of the game: involve humans into the network. What does a human being influence? Which connections does she/he have? -> A child representing a human being will have many ends of the cord in his/her hands. Discuss the question how human beings take care for all the connections and responsibilities they have!
- What does happen when one species disappears (human -> not much, forage plant -> deep impact, etc) or when all green plants are eliminated (the child lets go of its cord and the network will break down). -> Humans are not important parts of an ecosystem, but they do influence it immensely. Consequently they have a big responsibility because the extinction of other species can lead to the breakdown of the system on that humans do depend, too.

Fig. 4: Structure of an ecosystem.

Different levels in an ecosystem: producers, consumers, predators and decomposers. The decomposers recycle the nutrients of dung, carcasses and dead plants, so that the producers can use them for their growth again (symbolised by arrows).

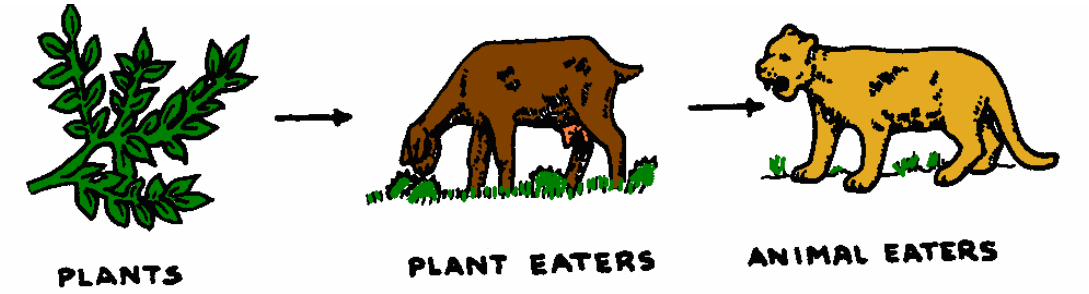


Oxygen production by green plants with help from sunlight, water and recycling of minerals

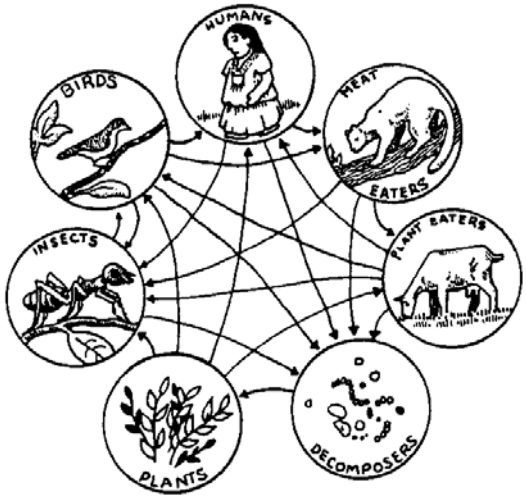


Oxygen production by green plants

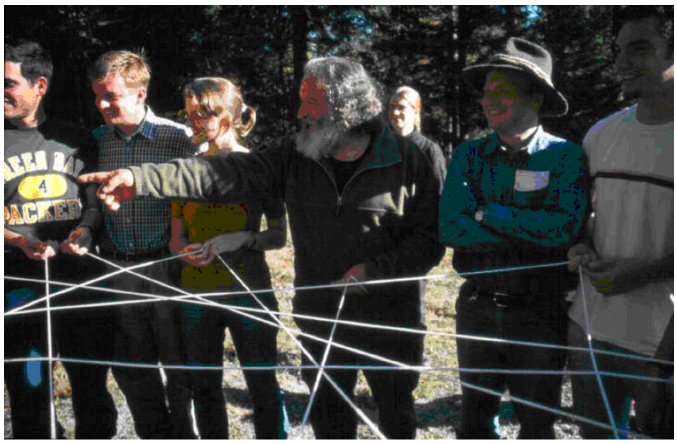
The green plants (producers) grow and produce oxygen with help from sunlight, water, CO_2 and nutrients. All living things depend on oxygen.



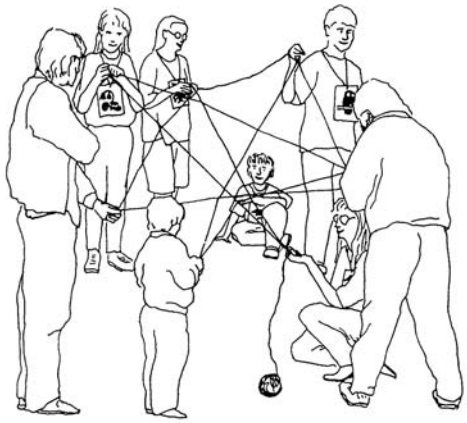
Food chain: green plants get eaten by consumers of 1st level, consumers of 1st level get eaten by consumers of 2nd level/predators.



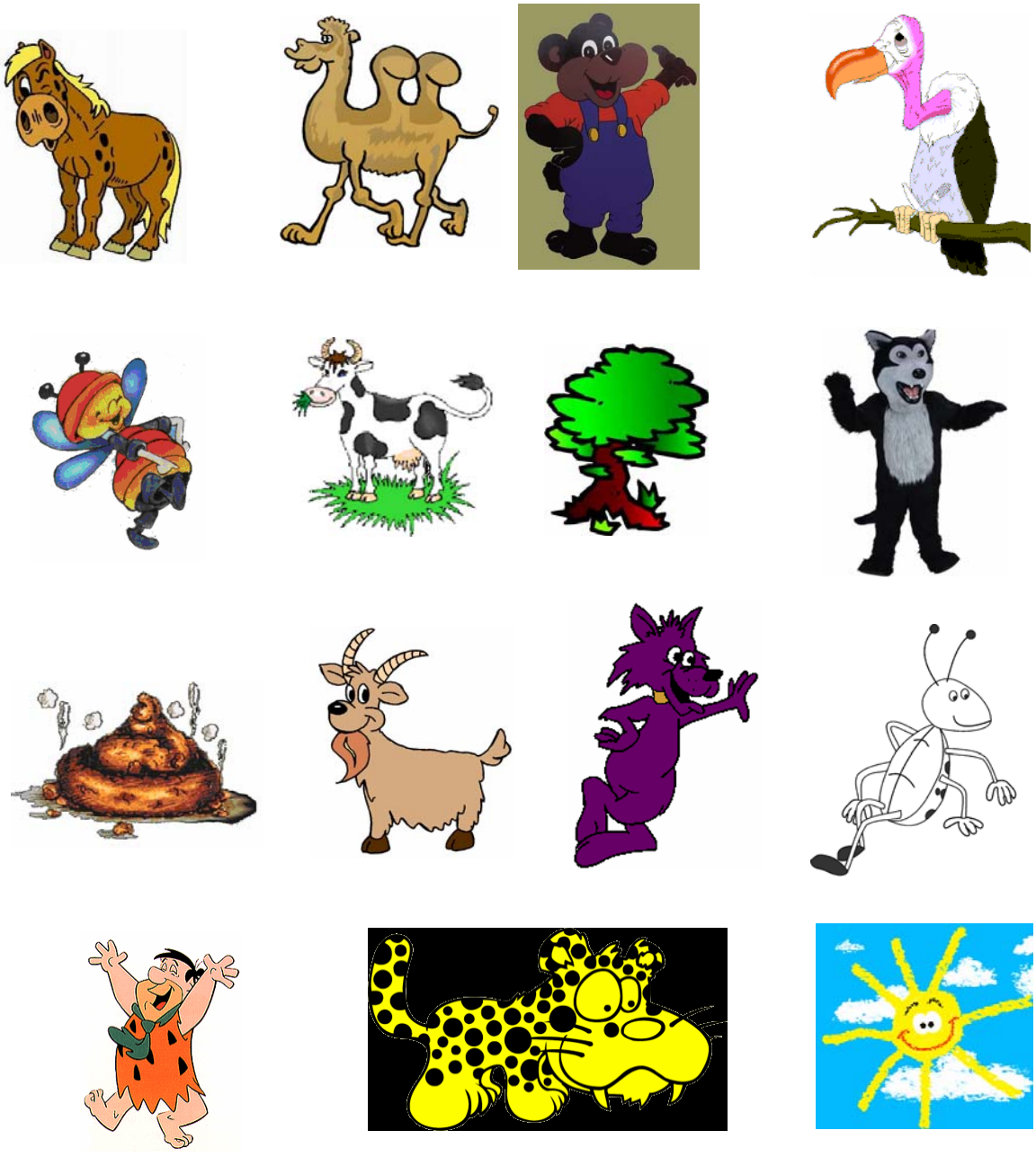
All parts of an ecosystem are connected with each other. Birds eat insects, humans eat plants, goats, they hunt meat eaters, they may influence the environment negatively so that the birds cannot survive, etc.



All do depend on each other



All do depend on each other: **This game shows the children that all parts of an ecosystem do depend on each other. Every child represents a species (species postcards are fixed on the children's' chest.**



Use these pictures to compose an ecosystem: who eats whom? Who depends on whom? Who is influenced by whom?

5. Waste problem

- Do the children know that plastic is dangerous for their livestock? Animals eat the plastic and plastic films. -> They may not die directly from eating the plastic, but the plastic particles can disturb the digestion so that the animal will die finally. Moreover the plastic particles release poisonous components to the animal organism.
- What is plastic? Since when is it commonly used in the Gobi B? What would happen if there were more people, if more plastic was thrown away? What would the steppe look like?
  - *Visions*: Can the children imagine how the Gobi will look like in 100 years? What will have happened to the waste? Paint some pictures or write an essay about your visions.
- What does happen to the waste? Does it disappear or stay there for a long time when it was thrown away? Where does it go? How long does it take to decompose?
- Explain the difference to “natural waste” (dead wood, carcasses, excrements), which is easily decomposed by insects, worms, bacteria and fungi (biological decomposition, see Ecosystem). Plastic, batteries and chemicals are no natural waste. Even when it looks like that plastic is decomposed easily, it is not. Most of the plastic sorts cannot be decomposed biologically, but only mechanically (wind, rain, etc.). Plastic, but above all batteries and chemicals hold poisonous components that can be released into the soil and ground water, where they will damage plants, animals and humans.
- Throwing plastic away must be avoided! Animals can die from eating it and toxic components can be released into the soil or water. Burning of plastic is NO ALTERNATIVE. -> When plastic is burned, toxic dioxins are released to the air (*see Fig. 5*). Mostly these toxic dioxins are deposed on the soil and plants quite close to the place where they were burnt. They can hardly be decomposed, so that they accumulate in the soil, in plants and in the fat tissue of humans and animals.

- Batteries, oil and chemicals (colours, acids, etc.) are toxic waste and very dangerous for humans and the environment. Only 100 ml of motor oil can poison 100.000 l of drinking water! Batteries contain mercury and cadmium, which both are highly toxic heavy metals. One little battery (e.g. used in a wristwatch) contains enough mercury to poison 800.000 l of drinking water! The toxic heavy metals are released to the environment when batteries are thrown away and start to rust. Then the mercury and cadmium seep into the ground and finally into the ground water. The ground water feeds the wells and is drinking water! Streams and lakes will be polluted as well (*see Fig. 5*). If batteries are burnt, the heavy metals vaporize and pollute the air. Cadmium causes cancer and damages renals and bones. Mercury is a very dangerous renal- and neurotoxin. These heavy metals are not only very toxic. In addition they are not decomposed or only very slowly. That means that the environment is poisoned for a very long time.
  - *Time of decomposition*: the children shall try to estimate how much time it takes to decompose
    * cigarettes (3 years)
    * plastic (20 years)
    * batteries (100 years, car batteries do take longer!)
    * iron (200 years)
    * aluminium (500 years)
    * ceramics/pottery (5.000 years)
    * steel (10.000 years)
    * glass (up to 50.000 years, but less in a desert because of the sand which sands down the glass)

    -> But even if the materials disappear because they are decomposed, their components stay in the soil and poison it for a much longer time!

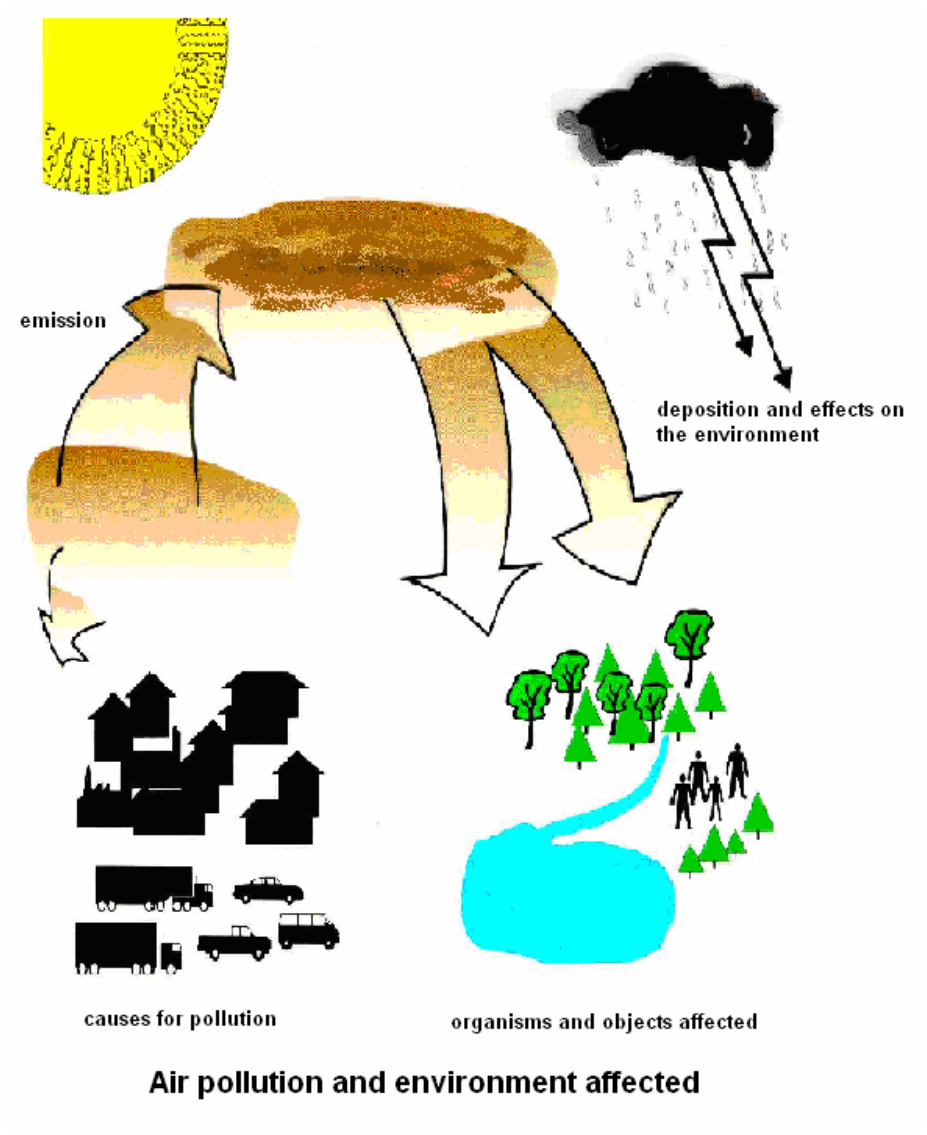
  -> Maybe a poster can be designed with some materials (glue some wood, steel, cigarettes, etc. on a poster) and an explanation how long they take to decompose.

- *Water Pyramid (see Fig. 5)*: wooden cubes can be put on each other so that a pyramid results, the cubes are marked as grass, water point, goat, horse, human, etc. The pyramid represents the food connections, e.g. the grass and the water form the base, then goats, horses, camels (all animals that eat plants) are put above them, then all animals that eat other animals (wolf, vulture, snow leopard) are put above these, in the end the human is put on top. -> What does happen if the base is eliminated (e.g. water point is poisoned by chemicals or batteries)? -> The complete pyramid breaks down.

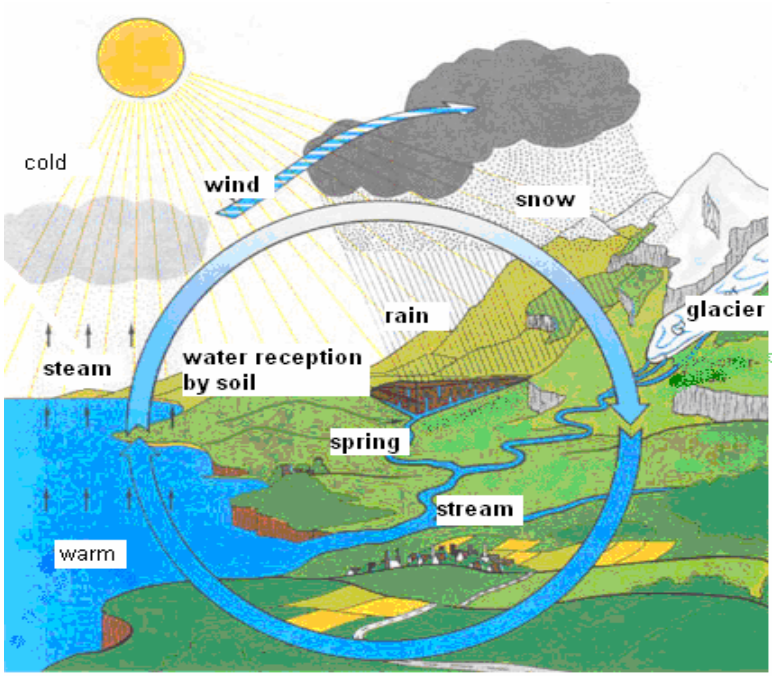
  -> All living things (also mankind!) depend on the basic resources water and plants. If humans destroy them (by poisonous waste) they will destroy themselves.

  -> The game can also be played as "*All do depend on each other*" but with water as base, in the sense of "*All do depend on water*": one child represents the water, all other children are connected with their cord to the water-child. If the water-child lets go of its cords all other animals will die.

Fig. 5: Waste Management.

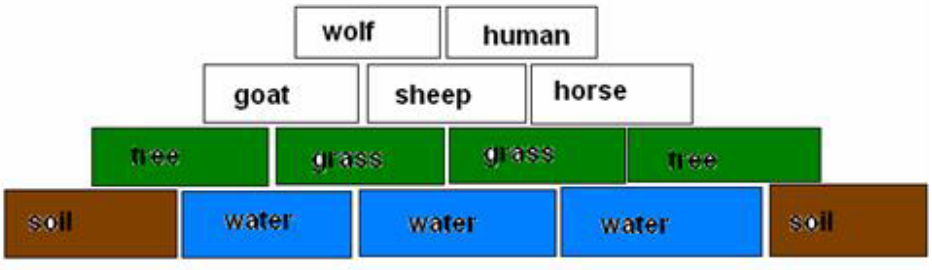


Burning of oil (traffic, heating) and waste (like plastic) leads to air pollution by harmful chemical gases (e.g. *CO*, Dioxins). The small elements of these gases deposit on the ground and affect humans and the environment negatively (plant growth is reduced, water cannot be drunk anymore, humans become ill (also by breathing the polluted air), etc.)



water cycle

The water supply is not static but a cycle: rain falls, seeps in the ground, becomes ground water, feeds the springs, gets into streams and flows in a lake or the sea. There it is heated up by sunlight and becomes steam, forms clouds and falls to the ground as rain or snow again. If the ground is polluted the seeping water gets polluted as well. If the air is polluted the falling rain is polluted as well. In an ecosystem everything is connected and influencing each other. Humans have a big responsibility to keep the natural cycles working.



***Water pyramid*: Water is a basic need for life. All living things depend on water. If water is polluted by toxic materials (chemicals, oil) there can be no live. If humans destroy this basic need they extremely harm themselves!**

6. Stories, Poems, Quotations and Songs

- The teacher/ranger can try to think of some stories, poems or quotations concerning nature. There are many nice stories, poems and quotations in literature that mediate a special feeling about nature, make us think about things and appreciate nature. -> e.g. “Every stupid boy can kill a beetle, but all professors in the world cannot construct a new one” (Schopenhauer, German philosopher), “A tree in the sun, a weathered stone, an animal, a mountain – they have a life, they have a story, they live, suffer, defy, enjoy and die, but we do not understand it” (Hesse, Swiss author), “We treat this world as if we had another one as substitute in the trunk” (Jane Fonda, US actress).
- Read a story/poem to the children. Which of the quotations do they like best? Can they come up with an own poem?
- Collect some nice songs about nature you can sing with the children.

8. How to motivate children

- Let them discover, study, observe and research themselves!
- Children like to work with their hands, paint pictures etc. Try to involve such things in your subject, e.g. let them paint a picture about something they find very beautiful in nature, let them express their ideas/impressions after an excursion, let them paint plants and animals.
- Do not try to let them sit or stand still all the time, they have to do that at school. When they are outside they want to run. Try to involve some running in your subject, e.g.:
  - *Predator and prey*: divide the group into some predators and the prey. Mark the field in advance. The predators try to catch the prey. If the prey got caught the child squats, it can join the game again when another prey-child touches it. -> The game is finished when all the prey is caught or after a certain time (managed by the teacher/ranger).

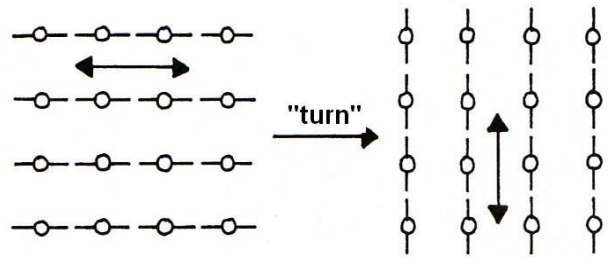
- *Cat and mouse in a labyrinth (see Fig. 6)*: this is a game for a lot of children. You need 11, better 18 children. One is the cat, one the mouse. The other 9 or 16 children stand next to each other in lines of 3 or 4 persons. The distance is so that the children can touch each other with their fingertips when they stretch out their arms. Like that, ways between the children come up. If the children turn around 90° they block the old way and come up with a new one. The mouse is hunted by the cat. In order to save itself the mouse can give the command "turn". The children turn around 90°, so that the mouse can hide from the cat behind the outstretched arms. -> Let the children turn around sometimes before starting the game. A lot of fun!
- *Takhi's tail*: the children form a queue so that each child has its hands on the shoulders of the child in front. The last child has a cloth/ scarf on its back. On a sign of the teacher/ranger the first child tries to catch the cloth on the back of the last child. The children must not let go of the child in front of them. -> Quick and easy game with a lot of fun to get the children going again!
- *Wild Ass and Wolf (see Fig. 6):* this is a good game to reinforce knowledge which was studied before. Divide the group into wild asses and wolves (50/50). Mark a rectangular field with a middle line. The wild asses and wolves stand opposite each other 3 m away from the middle line. The teacher/ranger says a sentence that can be true or false (e.g. Wild asses live in the Gobi B. Wolves eat plants. -> It is better to say very easy sentences). If it is true, the wild asses must catch the wolves. If it is false, the wolves must catch the wild asses. The children can only be caught on the field. If they pass the end line of their side of the field they are secure. A child that got caught must join the other group. -> Though it is a bit confusing in the beginning the children will have a lot of fun and the teacher/ranger can repeat contents of the subject!
- *Species Run*: the children are divided into 2-5 groups. Each group forms a queue and lines up next to the other groups. A picture of a species is handed out to each group (the groups shall look at the picture secretly so that the other children cannot see it). 10-15 m away the teacher/ranger has put down pictures

with the same species (4 for each group) and distributed them on the ground (face down). On a sign of the teacher/ranger the first child in each line starts to run to the cards on the ground and turns around one card. If it shows the picture of the group's species the child will take it back. If not it will put it back on the ground (face down again). The children run back to their group and touch the second child in line that runs to the cards, turns one around etc. The group that found all of its species pictures first wins and the game is finished.

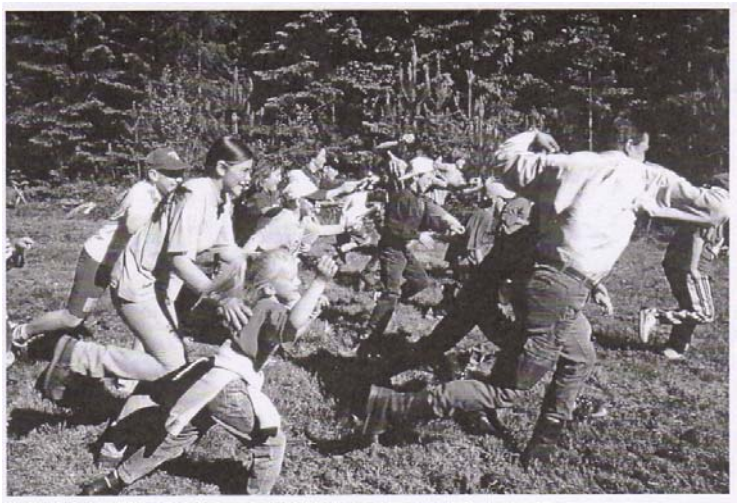
-> e.g. species could be Przewalski's horse, Wild Ass, Snow Leopard,…

-> Depending on the species that were chosen, the teacher/ranger can ask the children what the species have in common (here: all are endangered species) or what the differences between the species are (here: only the Snow Leopard is a predator).

Fig. 6: How to motivate children



***Cat and mouse in a labyrinth*: The mouse gives the command „turn" and the children turn 90° (arms outstretched) so that the hunting**



***Wild ass and wolf*: „Wolves are predators". The sentence is correct, so that the wild asses (left)**

9. What is missing? What needs to be organised?

- The school and the Takhi Camp need to have books about nature and environment. Books for teachers/rangers are necessary so that they can study the topics more detailed, but also children books are needed that explain complex subjects in an easy way so that the children can work with them independently.
- The small book about “The return of Takhi, the Przewalski’s horse” is already translated to Mongolian and needs to be printed.
- Species postcards/pictures (for the games), magnifying glasses, microscopes; this is already in the Takhi Camp but more will be needed: scissors, glue, coloured paper and pencils, water-colours.
- One person in the Takhi Camp needs to be responsible for environmental education otherwise it will not be possible to have a working environmental education concept. The responsible person needs to make sure that there is enough material, organise new material, talk to the teachers, organise school excursions together with the teachers, study environment/nature her-/himself and teach the children during their trips to Takhin Tal, organise and carry out the “wildlife club”.
- The transport problem needs to be solved. Can the Takhi Camp organise to bring the children to the Strictly Protected Area? The responsible person should organise the transport, too. Who organises and pays for the petrol? The responsible person could also try to find out if there are national or international funding options for environmental education.
- For the 2-3 day trips to Takhin Tal there must be enough sleeping places for the children and the cooking must be organised.
- If the parents shall get involved in environmental education as well, one must agree on a meeting point. Can the parents come to the Takhi Camp or to school? How can messages (about information meetings, special offers of the Takhi Camp, etc.) be exchanged? Are the parents interested? In what subjects are they interested?

10. How can parents and tourists get involved?

There cannot be real environmental education for tourists because there are too few. Nevertheless the Takhi Camp could offer some activities for tourists for payment, e.g. take them out on an information trip about wildlife in the Park, let them observe wildlife, inform them about the reintroduction project etc. Moreover there should be some posters in the Takhi Camp building to inform tourists about the Gobi B SPA: what are the goals of the Strictly Protected Area? Who is working here? Which species live in the area? What is their grade of endangerment? What endangers them? How was the Przewalski's horse brought back to Mongolia? etc. These posters must be in English, but maybe pupils could work out the design and the contents. Somebody has to translate it to English, but it should also be in Mongolian, so that local people can read the posters, too.

The parents should also be involved in environmental education. One must know what they are interested in, the responsible person could find that out and organise some information meetings for the parents. The responsible person can study subjects of interest more detailed, give these information to the parents and discuss with them. Activities that could also be interesting for parents are for example *All do depend on each other*, *Structure of an Ecosystem*, *"Wanted" Posters*. A very good activity for parents could be the *Role Play*. Moreover it would be an interesting option to invite local people to a lecture of a researcher, when one is coming to Takhin Tal for work. The responsible person could arrange such a lecture with the researcher.