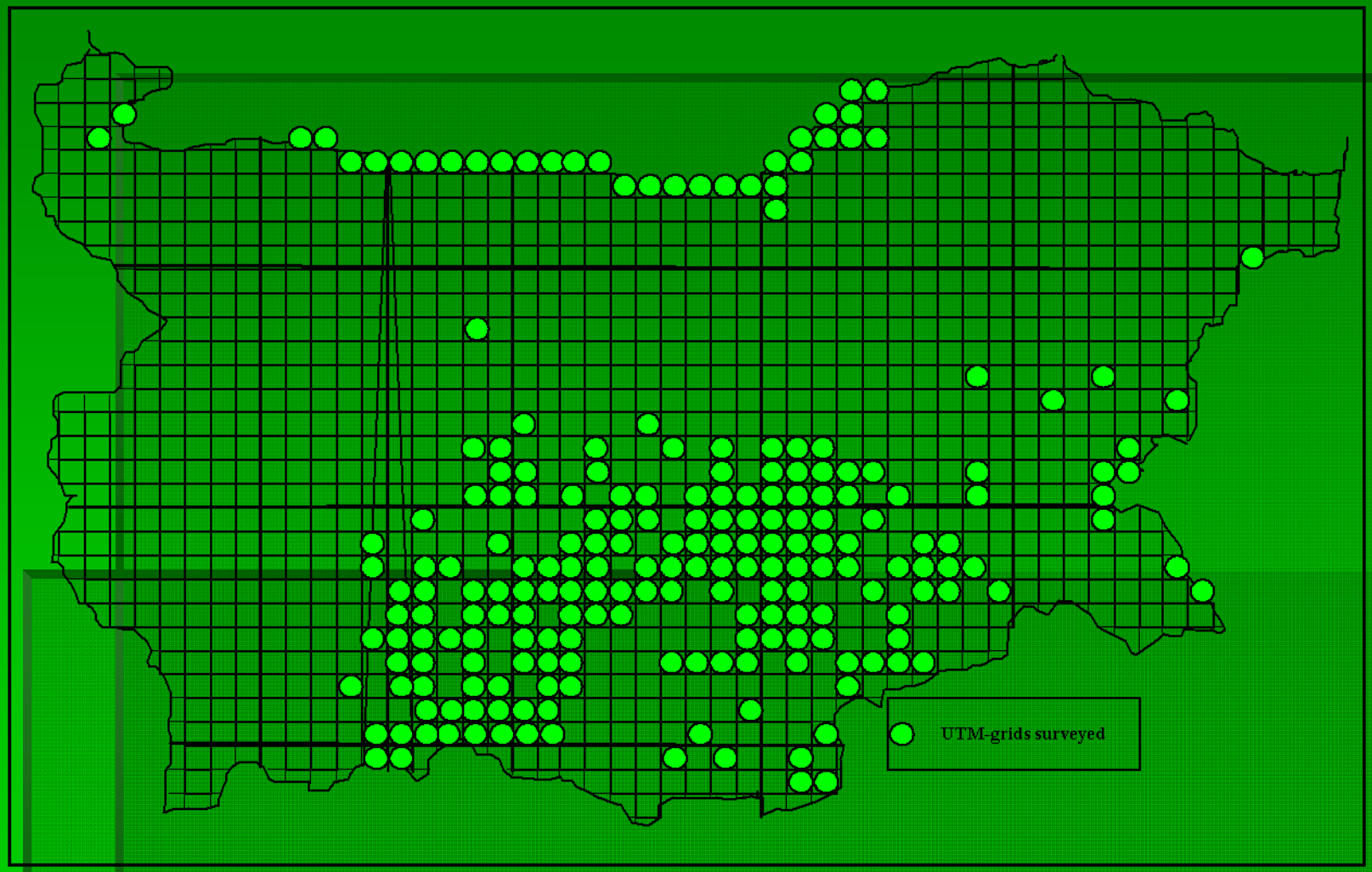
Eurasian otter (*Lutra lutra*) - current state in Bulgaria

GEOGRAPHY OF BULGARIA AND BIO-GEOGRAPHIC REGIONS IN THE COUNTRY

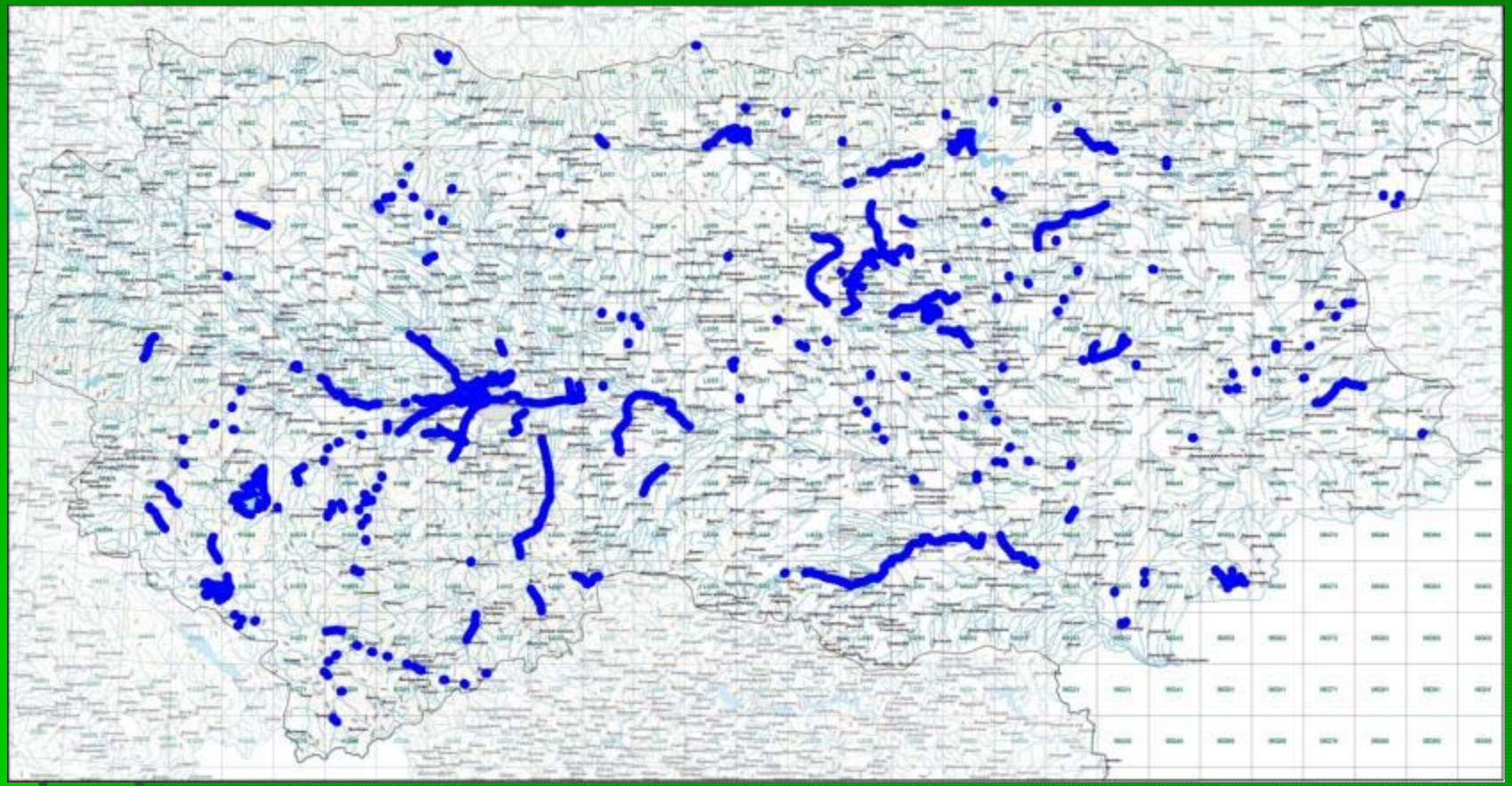
- The surface of all water bodies in Bulgaria is as follows (surfaces in hectares): inland marshes – 11525, peat bog – 439, salt marshes – 354, salt cellars – 696, water courses – 31332, water bodies – 48986, coastal lagoons – 2017, estuaries – 2231.
- There are three bio-geographic regions represented in the country: continental, alpine and the Black Sea region.

In the last 5 years (2003-2008) various habitats situated in 218, 10x10 km UTM-grid squares in Bulgaria were investigated for otter presence. The “standard” method for otter monitoring was used. Also walking on banks of various water basins from 1 to 20 kilometers was done. Over 600 km of bank line were walked. The present investigation was carried out by the author and by the help of conservationists from NGO “Green Balkans”.

UTM-grids surveyed for otter presence and otter habitats condition



Total 173 water basins were surveyed only in Upper Thracian Valley in southern Bulgaria



On the base of the results of the survey we made a classification of otter habitats in the country considering their existence during the year. We extrapolated the species distribution on the whole of the area of Bulgaria. We also divided the UTM squares in three groups, considering the possible different otter numbers:

1. Lowland areas between 0 and 400 m a.s.l. (a lot of constantly usable otter habitats exist) – possible strong otter population
2. Hilly areas between 401 and 1000 m a.s.l. (only 1-3 water bodies exist, not always constantly usable) – medium otter population
3. High mountain areas > 1000 m a.s.l. (no constantly usable otter habitats exist) – no constant otter population exist.

Habitat Distribution Of The Otter In Bulgaria

Our investigation in Bulgaria showed that the otter distribution depends only on the presence of suitable habitats. Where there was a proper otter habitat exclusively often otter signs were found, which speaks for a good population in the country.

As a whole the otter habitats in Bulgaria could be divided into three categories:

1. constantly usable (core)
2. relatively constantly usable
3. temporarily usable subsidiary habitats.

Otter habitats

- Constantly usable habitats
  - Black Sea coast
  - Lagoons and coastal lakes
  - Medium sized rivers
  - Large rivers
  - Large reservoirs
  - Large canals
- Relatively constantly usable habitats
  - Medium sized micro dams
  - Shallow ponds in fish farms
- Temporarily usable habitats
  - Small canals
  - Streams, small drying rivers, rivers upper streams
  - Human made concrete reservoirs
  - Swamps
  - High mountain lakes
  - Various pits full with water
  - Rice fields
  - Floods

Otter distribution and population status represented by 10x10 km UTM grid squares

The approximate quantities of the UTM-grids with various levels of otter population in Bulgaria as a result of extrapolation considering the habitat capacity are as follows:

Strong otter population (3 or more resident females per a square):

821 grids with good habitat conditions (~70% from all grids)

Weak otter population (about 1-2 resident females per a square):

212 mountain regions with low quantity of constantly usable habitats (~18% from all grids)

62 steppe regions of north-eastern Bulgaria (~5% from all grids)

8 dry regions in mainly in Sakar Mountain, southern Bulgaria (~0.7% from all grids)

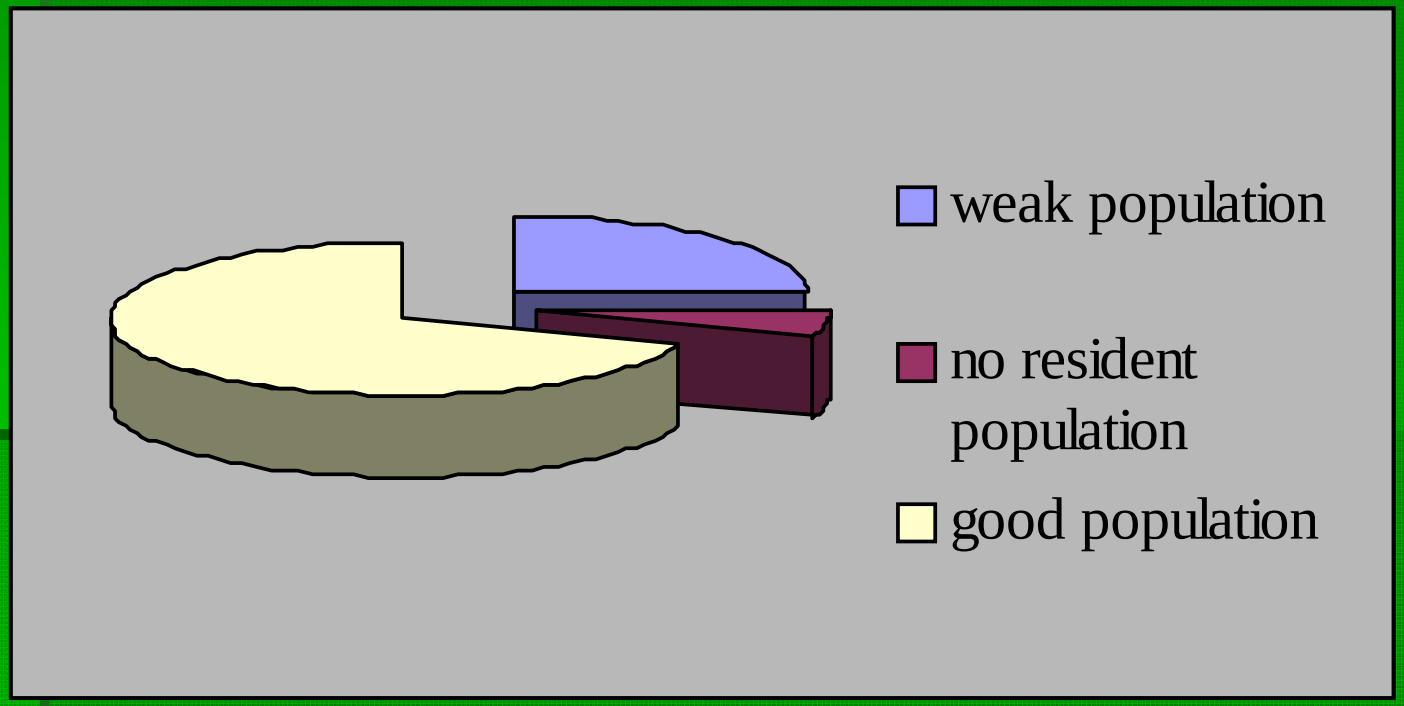
6 coastal areas with low quantity of freshwater basins (~0.5% from all grids)

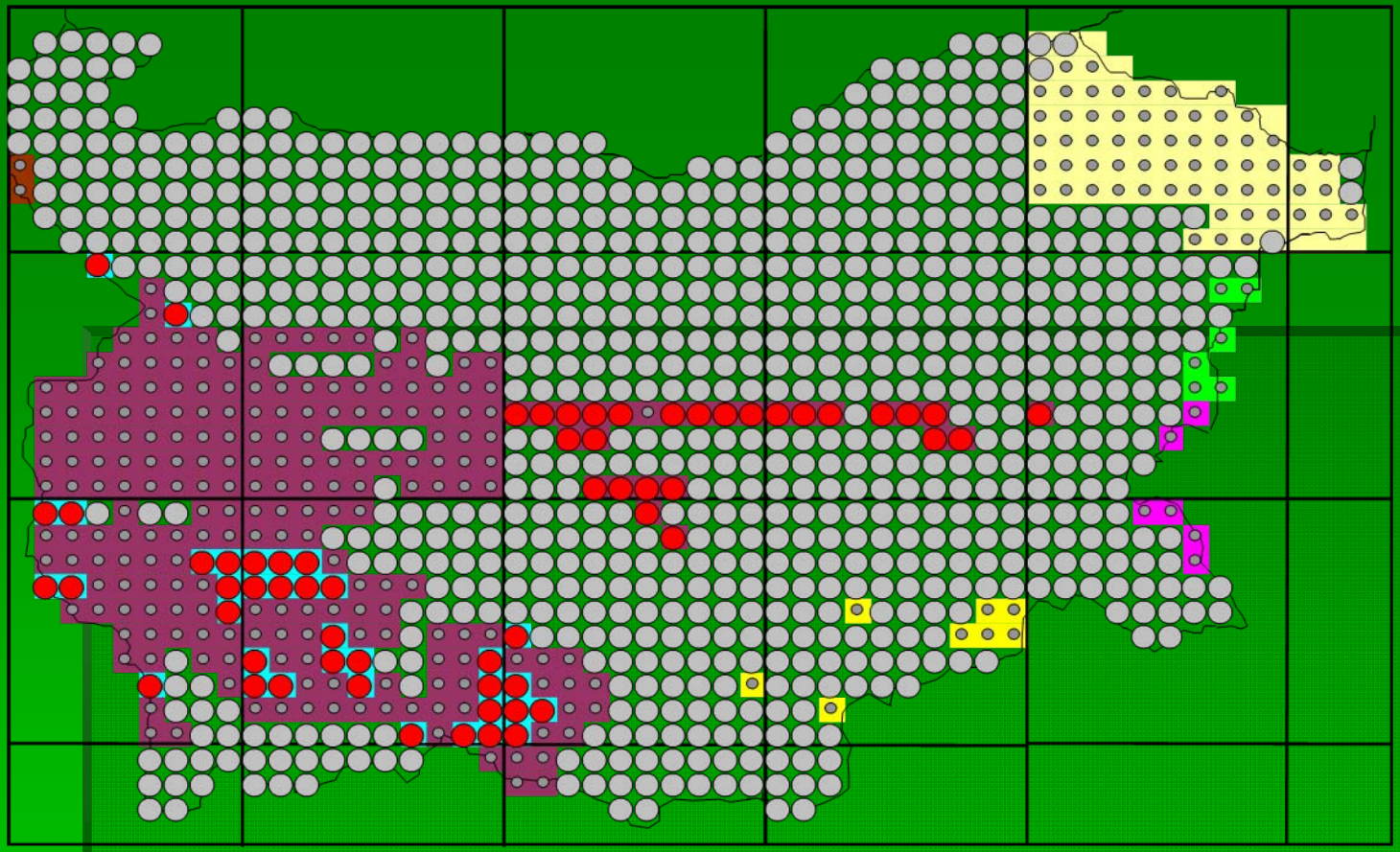
6 highly urbanized coastal areas (~0.5% from all grids)

No resident otter population (no otter population or sporadically visited squares):

62 mountain regions without constantly usable habitats (~5% from all grids)

Quantity of the 10x10 km UTM grid squares in Bulgaria, considered with the three level types of otter population.





Otter population of Bulgaria in UTM-grids 10x10 km:

- good population (a lot of constantly usable habitats)
- weak population (scarcity of constantly usable habitats)
- no population (lack of constantly usable habitats)

Reasons for weak or no otter population:

- steppe or dry regions
- mountain areas (401-1000 m alt.)
- high mountain areas (> 1000 m alt.)
- coastal areas with low quantity of freshwater basins
- highly urbanized coastal areas

RELATIVE QUANTITY OF THE ADULT OTTERS IN BULGARIA

The Eurasian otter has been protected in Bulgaria by law since 1962. After a change of political regime in 1989, the number of otters increased from 800 - 1200 adult and subadult individuals in the period 1977-1989 (Spiridinov & Spassov, 1989) and 1000 – 1400 in 1989-1994 (Spiridinov & Mileva, 1994) to 2300 – 2400 calculated in 2006 (Georgiev & Koshev, 2006, unpublished).

The last authors used the track measuring method in various habitats (in contrast with the previous authors using a questioning of the regional forestries), and considering the varied relative population density into them extrapolated the relative quantity of the adult and sub-adult animals in the whole territory of Bulgaria.

We used these data and the help of a GIS expert of “Green Balkans” to do a more precise extrapolation. We estimated that the average number of adult otters in Bulgaria, using the proper computer program, is around 3500 individuals (Georgiev & Dobreva, unpublished data).

NEGATIVE ANTHROPOGENIC PRESSURE ON OTTERS IN BULGARIA

Even we consider that at the present moment the otter population in Bulgaria is strong and in a good condition, we noticed some tendencies of negative anthropogenic pressures on it and some types of such negative influence were alarming when visibly increasing in the last years. If such tendency will continue in the future we consider that the otter population will be disturbed in Bulgaria. Here we point out the most evident sharp reasons for otter absence in some bank stretches studied:

Deforestation and disturbing the water basins bank structure

Two years ago a company for floods prevention was started in Bulgaria. Even it is an essential for the people who live close to rivers there were visibly a lot of speculations with this activity. Large areas along river banks were clearly cut off and no any tree vegetation was left. We suppose that the wood material was the main target for those “flood preventors” presented by the local municipalities.

A lot of examples could be pointed for direct negative influence on the otter population by such pressure.

One of them: In 2007 an entire island with very good forest was cut and after it the sand under it was removed (possible speculation and with the sand resource) in Maritza River at Plovdiv town at its western site. A lot of conservationist demonstrations and statements of experts did not prevent this destructive activity. An old otter den in roots of Slix sp. was destroyed by the machines.

Building of too many small water electricity centrals in the mountain regions

Critical we consider is the “explosion” of the buildings of small water electricity centrals in the mountain regions with no real evaluation on the threats on the environment. With this activity a long river stretches were dried off and in fact the otters disappeared from this habitat together with the habitat itself.

Photo: news.ibox.bg

Not proper management of the Black Sea coastal area by the government and the municipalities

In the last few years the critical human activity in eastern Bulgaria were the high levels of urbanization of the Black Sea coast line. In fact now there is a very long stripe of buildings (mainly hotels) at the south coast with no proper otter habitats existing.

Photo: moi.blog.bg

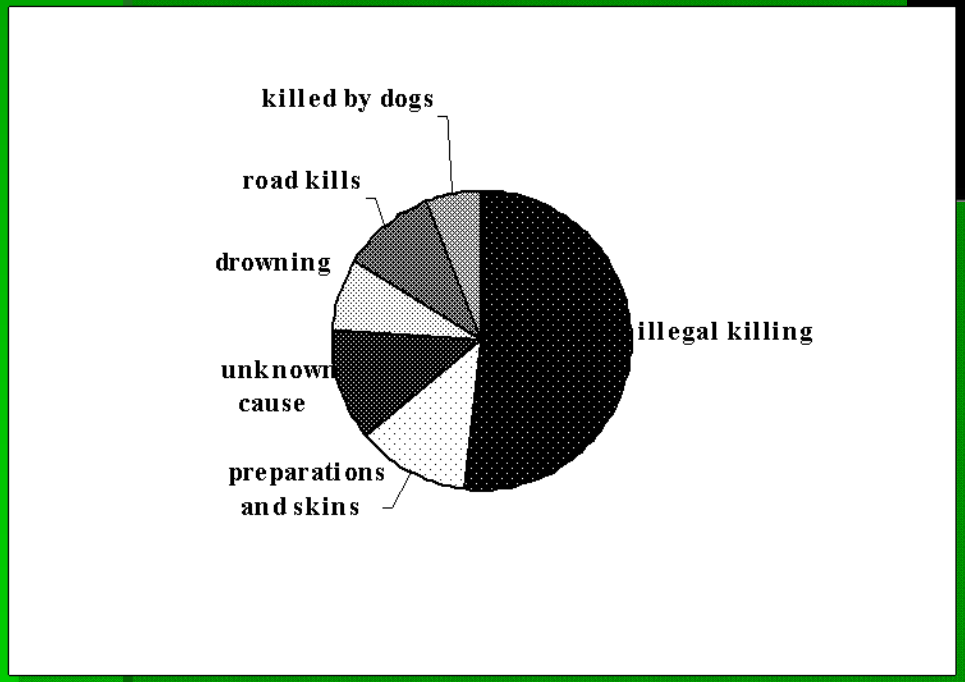
Poaching

Data were gathered mainly during 2005 and 2006 from 34 locations in Southern Bulgaria. Otter mortalities were investigated by questioning various people: biologists, fish-farmers, hunters and others. Otter mortalities (n = 50) were divided into the following types: poaching (killed by guns or various traps), drowning (nets, fyke nets), road kill, killed by dogs, collection of specimens (possession of otters or their derivatives, e.g. pelts, with unknown cause of death), and unknown cause.

Mortality locations were described as either: large river, medium sized river, lake, micro dams/fishponds, large dams, Black Sea, or unknown, as defined by Georgiev (2005). Poaching was the most common cause of death recorded in this study (n = 26; 52% of all mortalities recorded). 12% (n = 6) of the cases were of illegal possession of taxidermic specimens or otter pelts; illegal killing can be assumed but is not proven.

Killing of individuals

The poaching was the most frequent cause of death (55,6% from all cases).



CONCLUSIONS AND RECOMMENDATIONS

The otter is widely distributed and numerous in Bulgaria. Only the high mountain regions of the country has no any suitable habitats for the species and do not hold a resident poplation. Although there are some negative anthropogenic pressures on its population and negative influences were alarming when visibly increasing in the last years. So we suggest the following recommendations for otter conservation in Bulgaria:

1. Proper management of the running waters as:

1.1. Cleaning of the running water basins must be targeted on the deposits (dead trees, branches, and other) in the water which actually cause floods, and keeping the bank forests undisturbed.

1.2. Decreasing the density of small electricity centrals at the mountain regions, and real evaluation of the impact on the environment during the planning of their building.

2. **Stopping the urbanization of the Black Sea Coast and its adjacent areas as the coastal lagoons and mountain regions, especially in the protected areas.**

3. **Most significant cause of death recorded for the otter in southern Bulgaria was poaching as a consequence from present gaps in the national conservation policy.** Accordingly, we recommend a control on the micro dam fish-farms by the Regional Environmental Inspections and a control of the illegal possession or sale of otters and their derivatives (e.g. pelts). Also compensatory payments must be considered in the farms with known otter damage.

THANKS FOR THE ATTENTION!