

ENVIRONMENTAL AND CLIMATE CONSEQUENCES OF NEGLIGENT ATTITUDE TO GREEN LANDING IN CITIES AND POPULATED POINTS

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Introduction. In recent decades, people increasingly choose to live in cities. Comfort, amenities, a more developed society, the opportunity to realize oneself, etc encourage people to move to large places. Concrete and asphalt, high-rise buildings turn sleeping areas and central parts of the city into heat islands, the air temperature is significantly increased by the accumulation of vehicle exhaust gases and the operation of many household and industrial appliances. In such conditions, of course, there should be more places for trees [1]. At least that's what ecologists say. Green space contributes to the mental health of city dwellers, and most importantly, they help fight against harmful emissions and heat.

Description of research methodology. There is very little free space for nature in cities: premises for offices, street cafes and shops, residential buildings and buildings of other purposes, bicycle paths, highways, and transport stops. Despite the crucial role of urban trees in the fight for clean air and comfortable conditions for citizens, they are in a constant struggle for territory. And such a struggle is increasingly not in their favor [2].

Competition for territory in cities will constantly grow from year to year, it is against this background that it is very important to consider trees not as an aesthetic enrichment of cities, but as an ecological necessity, a regulator of the urban microclimate. More and more people understand the cooling power of trees, so they are fighting for the greening of cities (cutting down and careless pruning of trees).

Regulation of the urban microclimate is carried out at the expense of trees, they are real powerful stations for air purification. They provide shade, absorb carbon dioxide, absorb water through a branched root system, thereby preventing urban soil from being weak, thus reducing the risk of landslides after rains. It is usually much warmer in cities, so ecologists, experts in green construction, climatologists insist on the cooling property, trees reduce the heat island effect in cities. Stones and concrete evaporate the accumulated heat very slowly [3], and trees form a shadow, the temperature of buildings under the shadow in hot weather drops to 5 degrees Celsius.

Climatologists claim that trees in cities are a free environmental service. They provide the aesthetics of cities, and the biological diversity of green spaces in parks and squares satisfies our deep need for nature around us. Man has an innate desire for unity with nature (biophilia). Citizens who live in places with a sufficient number of trees rarely suffer from psychological diseases, feel less stress from suffocation and lack of quality air.

Our need for trees in cities is growing, it is vital. But why is there a «constant struggle» of urban trees for territory? Why are they destroyed? Groundless felling and pruning of branches «under the root», construction of underground parking lots without taking into account the growth of tree roots, beautification of squares and squares according to European tile and concrete projects without planting greenery, etc worsen the conditions of living in urban conglomerates. It is worth adding dust and emissions, mechanical shocks due to transport [4], damage to the roots during construction, from which trees suffer.

Ecologists and climatologists are sounding the alarm, the biggest threat to urban trees is the drought, due to which trees in the cities of Ukraine, especially in the southern regions, are becoming fewer and fewer. A third of all planted trees die from the heat in a city like Mykolaiv every year (research by the local landscaping department). Without enough water, they become vulnerable to diseases, weak. Another problem is that the city government

constantly lacks money for landscaping [5]. But ambitious and unique urban greening projects exist.

Climate change "requires" greater endurance from urban trees. Climatologists note that when planting trees, it is necessary to take into account local climatic conditions, meaning the southern regions of Ukraine, and to plant more trees that can withstand the heat well and are adapted to the artificial landscape of cities.

Many: ordinary citizens, local authorities have an opinion about planting non-native species, but ecologists have their own: firstly, many of them consider invasive and non-native trees harmful to local flora, they have no natural enemies and can quickly spread uncontrollably, displacing local species. But it is important to understand that banning the planting of invasive trees in city parks or private gardens is not that threatening, and even without planting invasive trees, it will not be possible to restore war-damaged green spaces in many settlements in the East and South of Ukraine. The main thing would be the desire and resources, and above all, there would be enough for this, both local tree species and other approaches.

Part of the problem of maintaining clean air in cities can be solved by involving citizens in the care of city trees. Climatologists and ecologists believe that the main thing is not to lose pace. In order for local residents to become official caretakers of city trees, they must be involved in special courses, they can take care of trees near their houses (watering in summer, etc). In addition, local authorities can, through permits, involve citizens in caring for trees in other areas of the city.

Note that such involvement of ordinary citizens has its advantages and disadvantages, much of which depends on the culture of the city. Although such measures cannot solve the problem of climate change [6], increasing the number of trees can contribute to a better understanding of nature by citizens, to see nature as a part of urban life.

The problem can be partially solved by a pre-developed action plan, which must necessarily include rescue from the abnormal heat in the city. These are so-called «vertical gardens» and green roofs. Ecologists and climatologists have calculated that if it is possible to cover about a quarter of the city buildings in the city, it is possible to expect a decrease in the air temperature on the streets by almost 8°C, and the level of its pollution will also decrease significantly. Tax benefits will have to be introduced for building owners who agree to carry out such renovation. Another measure to alleviate the heat is to reduce the level of exhaust in the city air. To do this, it is necessary to limit the entry into the city to all transit vehicles.

On open parking lots and highways, the appearance of an organic coating that will allow water to pass underground will not be superfluous. You can repaint the roofs of buildings and structures in a light color that will reflect the sun's rays, illuminate city roads. Such measures are expected to reduce the temperature inside residential buildings by almost 5 degrees. Yes, it's not cheap, but something needs to be done.

Results and conclusions. Trees have always provided something valuable to humans: basic necessities, food, oxygen, etc. Today, their value is growing significantly, in modern conditions, the role of trees in satisfying human needs has been expanded, and new advantages of trees are being discovered. Trees provide biodiversity, filter the water we drink, are key ingredients in many medicines, and finally clean the air we breathe by absorbing harmful carbon from the atmosphere.

Healthy, strong trees in the city through their leaves and bark absorb carbon dioxide and harmful pollutants, such as: nitrogen oxides, carbon monoxide, ozone, remove dust and smoke particles from the air, instead release pure oxygen, reduce the effects of climate change.

Drainage of rainwater is a problem for settlements, especially after abundant long-term rains. The presence of trees reduces the risk of natural disasters, such as flooding of basements and semi-basements, landslides, and dangerous erosion. Their root system acts as a filter, slows down the absorption of water into the soil, and removes pollutants.

Pollution and overheating of the environment that surrounds a person in the city become a real threat. Trees store harmful greenhouse gases such as carbon dioxide in their trunks, branches and leaves, they cool the air by releasing oxygen back into the atmosphere. A mature tree absorbs up to 10 kg of carbon dioxide per year, making our cities healthier and safer.

Quiet and cozy parks and squares evoke a sense of admiration in the inhabitants of cities and settlements. Walking through a calm, quiet square reduces the possibility of stress and anxiety. We are reunited with nature thanks to green areas between stone and concrete-glass buildings, they save us. Think about why destroy the greenery of cities, every tree, every leaf is important.

Keywords: landscaping, society, green space, urban microclimate.

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