

Ryc. 3 Zmiana blokowych ta integralnych wyznacznikiw klasa jakości wody r.Prut w godzinie (granica basenu s.Lenkivtsi)

Prawie przez cały okres obserwacji zaznaczono trzecią klasę jakości wody obecność azotu amonowego i azotu azotowego w dwóch konfiguracjach. W dodatku dookoła Kołomyi, trzecia klasa jakości, ocenila zawartość wody w fosforze fosforowym (2008, 2015, 2016 i 2017 gg.), aw 2011 r. nadal jest w zawartości chlorków. W granicach wsi Lenkivka ta sama klasa jakości. Woda z tych składników była obserwowana w latach 2010-2013, 2015 i 2017.

W końcu możemy stwierdzić, że woda jest ogólnie odpowiednia do picia a wartości średnie odpowiadają drugiej klasie, to znaczy „dobrej, akceptowalnej jakości wody”. Najgorsze wskaźniki jakości zaobserwowano w latach 2009-2010 i 2017 w mieście Kołomyja i w 2008, 2010 roku w wiosce Lenkivtsi. Na jakość wody mają wpływ głównie substancje z grupy azotowej i fosforany fosforu. Ogólnie rzecz biorąc, występuje nieznaczna poprawa jakości wody pod względem czasu.

Źródła literackie

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THE ENVIRONMENTAL IMPACT OF THE GRAVEL MINE

The assessment of impact of the mining enterprise on the local environment is performed using: AHP method and a simplified form of the Leopold's matrix (called matrix of impacts). With this methods, the types of impact that affect the elements of the environment can be identified and quantified. In the article was showed, that the impact of gravel mining in Klaj(Poland), due to the large distance between the site and Natura 2000 area and due to the objects of protection, is small.

Key words: gravel mine, environment, Leopold matrix

Assessment of the environmental impact exerted by mining of natural aggregates depends on the proper selection of features (factors) that affect the problem. In this article much weight is put on the content-related selection of features that has been performed by the experts. The criteria have been chosen in such a way as to facilitate describing the issue in question comprehensively.

On the basis of the selected features, a hierarchical model has been established to assess the environmental impact of natural aggregates mining. The environmental impact assessment of natural aggregates mining was performed with the participation of experts whose competences covered all the elements of assessment of the problem under analysis.

The assessment of impact of the mining facility on the local environment was performed using a simplified form of the Leopold's matrix (the so-called matrix of impacts). The applied method is one of the techniques used in assessing environmental impact. With this method, the types of impact that affect the elements of the environment can be identified and quantified. As a result of multiplying the magnitude of impacts and importance of particular envi-

ronmental elements and by summing of all impacts subsequently, a total value of the assessment of environmental impact exerted by the facility has been established [1, 2, 3].

The effect of the types of impact on particular environmental items in the Klaj deposit is very limited, except for the formation of the conical pit (1,132) as a result of resources bailing (0,641) and removal of additional fill (0,506). Other analysed impacts on environment elements are of little significance (Fig. 1).

In the Klaj deposit, an impact of mining activity on the lithosphere (1,798) and hydrosphere (1,338) was recorded. The items that are particularly susceptible to impact are ground waters (1,249), landforms and landscape (0,618). An interesting point is the lack of any impact on fauna (0,000) and flora (0,000). Other items under analysis are subject to small impact of mining activity (Fig. 2).

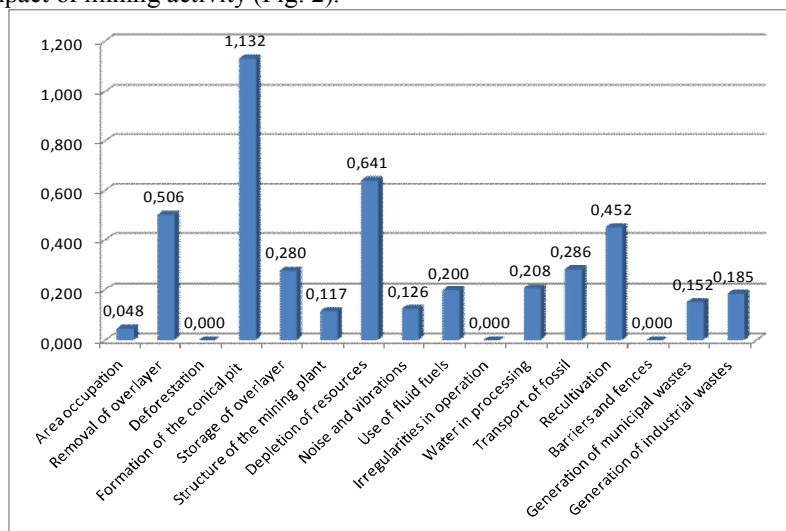


Fig. 1. Magnitude of impact of the diagnosed impact types on the environmental items in the Klaj deposit [prepared by authors]

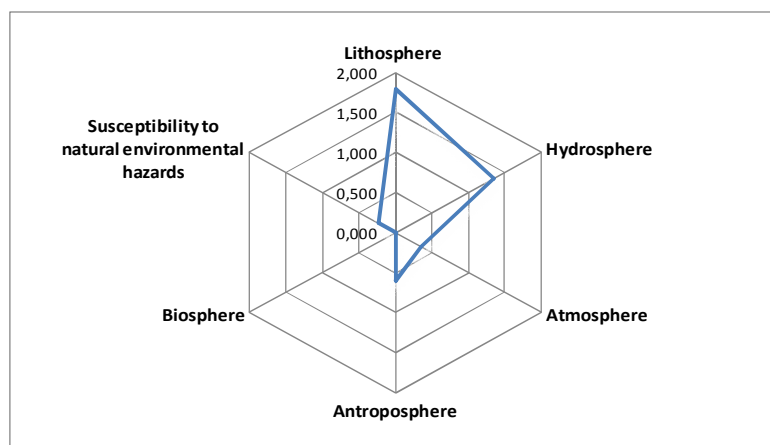


Fig. 2. Assessment of the impact of sand and gravel deposit in Klaj on particular environmental items [prepared by authors]

The impact assessment of mining activities carried out in the deposit in question shows that the lithosphere is the most vulnerable to mining activities from among all of the environmental items. Fairly strong pressure is observed in the hydrosphere, mainly in surface waters. Changes in the atmosphere, antroposphere and in the susceptibility of the environment to natural hazards are very small or insignificant. In the Klaj deposit, no negative changes in the biosphere were observed. The overall conclusion is that the impact of sand and gravel mining in Klaj – due to the large distance between the site and Natura 2000 area and due to the objects of protection – is small.

References

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