

The task force explored different ways to deal with the waste that threatens the Buffalo Reef Lake Superior. One option was to pump the waste into deep water or far from the reef. This would create a huge underwater pile of waste that could harm the fish living there. The tribal agencies and a professor from Michigan Tech rejected this option as ecologically harmful. Another option was to dredge the waste and dump it on wetlands. This would destroy the wetlands and their benefits for wildlife and flood control. The task force also looked at putting the waste in landfills or at an old copper mine. Regis favored these options as they had permits for waste disposal.

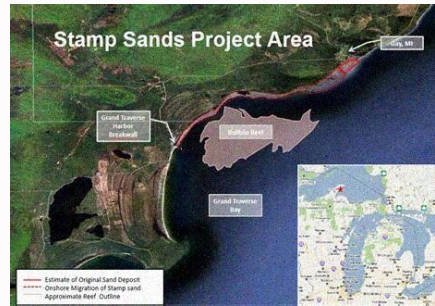


One option is to build a wall along the shore to stop the sands from moving south. However, this could also affect the natural sand movement and cause erosion for some landowners. Another option is to dredge the sands and move them elsewhere, but this would be costly and time-consuming. The task force is still weighing the pros and cons of each option. This article is based on the newsletter "Studying the Fish of Buffalo Reef", which you can find online. The newsletter was published in August 2020 with the support of the Great Lakes Restoration Initiative and the Great Lakes Fishery Commission. The newsletter also reports on a study that examines how the stamp sands affect the spawning of lake trout and lake whitefish on Buffalo Reef. The researchers tagged 50 fish of each species and tracked their movements on the reef. They also collected eggs and sediment samples to measure the impact of the stamp sands on the fish reproduction. The study aims to provide scientific data for the future management of Buffalo Reef. The article describes a research project that aims to understand how stamp sand, a byproduct of copper mining, affects the spawning and survival of lake trout and lake whitefish on Buffalo Reef, a critical habitat in Lake Superior. The researchers use two methods to achieve their goals: - They implant acoustic tags in adult fish and track their movements with underwater receivers on Buffalo and Traverse Island reefs. The receivers upload the data to the GLATOS network, which allows the researchers to share their findings with other scientists. The tags help the researchers identify where the fish spawn and how the stamp sand distribution influences their behavior. - They expose fertilized eggs and larval fish to different levels of stamp sand in laboratory aquariums at the Hammond Bay Biological Station. They monitor the effects of stamp sand on the development, growth, and behavior of the young fish. They also plan to compare the laboratory results with the field observations of egg and larval fish distribution and survival on Buffalo Reef. The article includes several figures that illustrate the research methods and results. Figure 1 shows the acoustic tags, the receivers, and the tagged fish. Figure 2 shows the eggs and larval fish in the aquariums. Researchers are studying how mining waste affects the fish population in **Buffalo Reef Lake Superior**, a vital habitat for lake trout and lake whitefish. They use divers, robots and traps to monitor the eggs and larvae on the spawning reefs. They also analyze the genetic changes in the fish due to the stamp sand concentration. This work started last winter and will continue until 2023. Fig. 2(A) Lake trout eggs ready for experimental treatments. (B) Brad Buechel of the U.S. Geological Survey measures a larval lake trout with a digital imaging system at the Hammond Bay Biological Station (Andrea Miehl, Great Lakes Fishery Commission photos). In 2021, a new project will begin with the support of the Buffalo Reef Task Force and the Great Lakes Restoration Initiative.

This project will increase the frequency and scope of the juvenile fish monitoring programs by tribal fisheries biologists. They will sample more reefs in Keweenaw Bay and compare the results. They will also use natural markers in the fish ear stones and genetics to estimate how much Buffalo Reef contributes to the fishery. They will use the otoliths from previous years to calculate the past and present contribution. Join the effort: For more information, visit [. You can find reports, photos, news releases, a task force email sign-up portal and a link to a Michigan Technological University webpage on the effort to protect the reef and its fish habitat. Read more Pulse on Science: Project Spotlights The Buffalo Reef Task Force, which includes state, federal and tribal groups, is seeking public input on how to clean up the mining waste that threatens the reefs in Lake Superior. The project is expected to cost more than \\$2 billion. The aim is to remove the stamp sands, the copper mining waste that was dumped at a milling site in the past.. The Buffalo Reef in Lake Superior is a vital habitat for white fish and lake trout, but it is endangered by stamp sands, a byproduct of copper mining, that cover more than half of its 2,200 acres. The stamp sands also pollute the water and the shore with copper and other substances. A task force led by the U.S. Environmental Protection Agency is working to find a solution to this problem. The task force includes representatives from the Keweenaw Bay Indian Community, who first alerted the authorities about the pollution, and other federal, state, and tribal agencies. The task force's preferred option is to build a landfill on land to store the stamp sands, but this would be very costly: more than \\$2 billion over the project's lifetime. The money would be used to buy land, construct the landfill, and find an agency to own and maintain it and a jetty to prevent the stamp sands from spreading in the lake. The task force also considered two other alternatives: building a barrier in the lake to trap the stamp sands, or transporting them to an old mine site in Ontonagon County. However, both of these options had significant drawbacks, such as high costs, logistical challenges, and long-term maintenance](#)

issues. The task force is seeking public feedback on the proposed plan and the alternatives until March 1. People can send their comments to Stephanie Swart, Water Resources Division, at SwartS@Michigan.gov, or mail them to EGLE, Water Resources Division, Great Lakes Management Unit, P.O. Box 30458, Lansing, MI 48909-7958. The task force will review and consider the comments before making a final decision.

. The stamp sands are a potential hazard for the buffalo reef in Lake Superior.



This would use the waste to stop its spread.. The Buffalo Reef Task Force is exploring different ways to deal with the stamp sands, a mining byproduct that threatens the reef's ecosystem. One option is to build a wall along the shore to stop the sands from moving south. However, this could also affect the natural sand movement and cause erosion for some landowners. Another option is to dredge the sands and move them elsewhere, but this would be costly and time-consuming. The task force is still weighing the pros and cons of each option. This article is based on the newsletter "Studying the Fish of Buffalo Reef", which you can find online. The newsletter was published in August 2020 with the support of the Great Lakes Restoration Initiative and the Great Lakes Fishery Commission. The newsletter also reports on a study that examines how the stamp sands affect the spawning of lake trout and lake whitefish on Buffalo Reef. The researchers tagged 50 fish of each species and tracked their movements on the reef. They also collected eggs and sediment samples to measure the impact of the stamp sands on the fish reproduction. The study aims to provide scientific data for the future management of Buffalo Reef.

The article describes a research project that aims to understand how stamp sand, a byproduct of copper mining, affects the spawning and survival of lake trout and lake whitefish on Buffalo Reef, a critical habitat in Lake Superior. The researchers use two methods to achieve their goals: - They implant acoustic tags in adult fish and track their movements with underwater receivers on Buffalo and Traverse Island reefs. The receivers upload the data to the GLATOS network, which allows the researchers to share their findings with other scientists.



One option is to build a wall along the shore to stop the sands from moving south. However, this could also affect the natural sand movement and cause erosion for some landowners. Another option is to dredge the sands and move them elsewhere, but this would be costly and time-consuming. The task force is still weighing the pros and cons of each option. This article is based on the newsletter "Studying the Fish of Buffalo Reef", which you can find online. The newsletter was published in August 2020 with the support of the Great Lakes Restoration Initiative and the Great Lakes Fishery Commission. The newsletter also reports on a study that examines how the stamp sands affect the spawning of lake trout and lake whitefish on Buffalo Reef. The researchers tagged 50 fish of each species and tracked their movements on the reef. They also collected eggs and sediment samples to measure the impact of the stamp sands on the fish reproduction. The study aims to provide scientific data for the future management of Buffalo Reef. The article describes a research project that aims to understand how stamp sand, a byproduct of copper mining, affects the spawning and survival of lake trout and lake whitefish on Buffalo Reef, a critical habitat in Lake Superior. The

researchers use two methods to achieve their goals: - They implant acoustic tags in adult fish and track their movements with underwater receivers on Buffalo and Traverse Island reefs.

The receivers upload the data to the GLATOS network, which allows the researchers to share their findings with other scientists. The tags help the researchers identify where the fish spawn and how the stamp sand distribution influences their behavior. - They expose fertilized eggs and larval fish to different levels of stamp sand in laboratory aquariums at the Hammond Bay Biological Station. They monitor the effects of stamp sand on the development, growth, and behavior of the young fish. They also plan to compare the laboratory results with the field observations of egg and larval fish distribution and survival on Buffalo Reef. The article includes several figures that illustrate the research methods and results. Figure 1 shows the acoustic tags, the receivers, and the tagged fish.

Figure 2 shows the eggs and larval fish in the aquariums. Researchers are studying how mining waste affects the fish population in **Buffalo Reef Lake Superior**, a vital habitat for lake trout and lake whitefish. They use divers, robots and traps to monitor the eggs and larvae on the spawning reefs. They also analyze the genetic changes in the fish due to the stamp sand concentration. This work started last winter and will continue until 2023. Fig. 2(A) Lake trout eggs ready for experimental treatments.

(B) Brad Buechel of the U.S. Geological Survey measures a larval lake trout with a digital imaging system at the Hammond Bay Biological Station (Andrea Miehl, Great Lakes Fishery Commission photos). In 2021, a new project will begin with the support of the Buffalo Reef Task Force and the Great Lakes Restoration Initiative. This project will increase the frequency and scope of the juvenile fish monitoring programs by tribal fisheries biologists. They will sample more reefs in Keweenaw Bay and compare the results. They will also use natural markers in the fish ear stones and genetics to estimate how much Buffalo Reef contributes to the fishery. They will use the otoliths from previous years to calculate the past and present contribution. Join the effort: For more information, visit [. You can find reports, photos, news releases, a task force email sign-up portal and a link to a Michigan Technological University webpage on the effort to protect the reef and its fish habitat. Read more Pulse on Science: Project Spotlights The Buffalo Reef Task Force, which includes state, federal and tribal groups, is seeking public input on how to clean up the mining waste that threatens the reefs in Lake Superior. The project is expected to cost more than \\$2 billion. The aim is to remove the stamp sands, the copper mining waste that was dumped at a milling site in the past.. The Buffalo Reef in Lake Superior is a vital habitat for white fish and lake trout, but it is endangered by stamp sands, a byproduct of copper mining, that cover more than half of its 2,200 acres.](#)

The stamp sands also pollute the water and the shore with copper and other substances. A task force led by the U.S. Environmental Protection Agency is working to find a solution to this problem. The task force includes representatives from the Keweenaw Bay Indian Community, who first alerted the authorities about the pollution, and other federal, state, and tribal agencies. The task force's preferred option is to build a landfill on land to store the stamp sands, but this would be very costly: more than \$2 billion over the project's lifetime. The money would be used to buy land, construct the landfill, and find an agency to own and maintain it and a jetty to prevent the stamp sands from spreading in the lake. The task force also considered two other alternatives: building a barrier in the lake to trap the stamp sands, or transporting them to an old mine site in Ontonagon County. However, both of these options had significant drawbacks, such as high costs, logistical challenges, and long-term maintenance issues. The task force is seeking public feedback on the proposed plan and the alternatives until March 1. People can send their comments to Stephanie Swart, Water Resources Division, at SwartS@Michigan.gov, or mail them to EGLE, Water Resources Division, Great Lakes Management Unit, P.O. Box 30458, Lansing, MI 48909-7958. The task force will review and consider the comments before making a final decision. . The stamp sands are a potential hazard for the buffalo reef in Lake Superior. The DNR and other groups are working together to reduce this risk. They have dredged the harbor and cleared a large bank from the shore in 2019. These actions have improved the recreational use of the waterway.