loads correlate with several water quality parameters including pH, turbidity, and salinity. During a weekly collection period from June through September 2007, 51 fish were caught using fishing rods and bait from five different ponds. The ponds, varying in their water quality characteristics, ranged from 0.8 to 3 hectares. Each fish was euthanized, gill clips were taken, and a necropsy was performed. Additionally, liver samples from each bass were preserved to be analyzed for encysted macro-parasites. A total of six parasite species were identified among the entire sample, including: yellow grub (*Clinostomum* spp.), black spot parasites (*Neascus* spp.), *Contracaecum* spp., *Dactylogyrus* spp., *Trichodina* spp, and liver parasites. These parasites were found in gill clips, within body cavities, on and within organs, and on the external scale surface of individuals. Parasite load data will be plotted along side water quality measurements in order to detect possible patterns. If potential linear relationships appear in the graphical data, subsequent correlation analysis will be run.

Poster Board No.016

PARASITE LOADS IN THREE SUNFISH SPECIES (*LEPOMIS sp.)* ON RECLAIMED SURFACE MINE PONDS IN SOUTHEASTERN OHIO (THE WILDS).

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The water quality of ponds on reclaimed surface mines has been shown to potentially compromise the health of some fish species (particularly Centrarchids), by increasing their vulnerability to both ecto- and endoparasites. In this study, parasite loads in bluegill sunfish (*Lepomis* macrochirus), redear sunfish (*L.* microlophus) and longear sunfish (*L. megalottis),* taken from four ponds at the Wilds, were examined from June through September 2007. The goal was to determine whether different measures of water quality might be related to parasite loads in any or all these species. Fifty three fish were sampled from the four ponds using a fishing pole equipped with both live and artificial baits (seining and electro-shocking options were unavailable). Once attained, each fish was checked for the presence of ecto-parasites within the fins, gills, and external body surface. A small gill clip was taken and viewed under a microscope to check for microscopic parasites. Subsequently, each fish was necropsied and its internal body cavity was checked for additional parasites. The liver, spleen, and caudal kidney were removed and preserved in formalin. Initial tissue analysis, undertaken at the Ohio State University, revealed that four parasite species were present in the three sunfish species. These included two larval trematodes, yellow grub (*Clinostomum marginatum*) and black grub (*Neascus* spp.), a digenetic trematode (*Dactylogyrus vastator*), and an aniskid nematode (*Contracaecum* spp.). Parasite load data will be plotted against various water quality parameters (nitrates, ammonia, pH, salinity, turbidity, hardness, and dissolved oxygen) in an attempt to detect potential linear relationships between the two.

Poster Board No.017

USE OF A PROGESTERONE ASSAY TO DETECT PREGNANCY IN RHINOCEROS AT THE WILDS.

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The entire rhinoceros taxon is on the verge of extinction. Due to habitat loss and poaching, rhinoceroses in the wild are often not alive long enough to mature to breeding age. Efforts to breed captive rhinoceroses have met limited success and could be improved with a simple method to detect early pregnancy. The goal of this research was to set up an assay at the Wilds to detect pregnancy in the Indian (*Rhinoceros unicornis*) and the Southern White (*Ceratotherium simum simum*) rhinoceros species. The Wilds is located in Southeastern Ohio and is known as an innovative wildlife conservation center. The assay that will be implemented at The Wilds is a competitive enzyme immunoassay which will be utilized to detect progesterone metabolite levels in feces. This enzyme immunoassay will be modified from a previously established Progesterone Assay in order to efficiently perform routine analysis of rhinoceros progesterone metabolite levels at The Wilds. Progesterone levels increase drastically in pregnant females when compared to non-pregnant females; therefore increases in metabolites of the hormone progesterone will be measured to determine rhinoceros pregnancy. Fecal samples will be used to detect progesterone as nearly all of the progesterone metabolites are excreted through the feces In addition, feces are easier to collect versus urine or serum. The data collected will be used to allow for early detection of pregnancy in rhinoceroses. This work will involve the development of the Enzyme Immunoassay at The Wilds and includes methods used to manage data and organize reagents.

Poster Board No.018

LOCALIZATION OF A DYSTROGLYCAN COMPLEX IN HUMAN EPIDERMIS.

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The purpose of this study is to determine whether human epidermis contains the dystroglycan protein complex first identified in skeletal muscle. The dystroglycan protein complex consists of á- and â-dystroglycan protein subunits and additional proteins including syntrophin, dystrobrevin, á-sarcoglycan, b-sarcoglycan, ã-sarcoglycan, d-sarcoglycan, e-sarcoglycan, sarcospan, and dystrophin or utrophin. The a-dystroglycan protein subunit is a peripheral protein that is attached to the integral membrane b-dystroglycan subunit. Together, á- and â-dystroglycan serve as a link between the extracellular environment and the cytoskeleton. In animal and human tissue studies, dystroglycan has been found in muscle, nervous, connective, and some simple epithelial tissues. Dystroglycan has been identified in epidermis; however, it is unclear whether it exists as a multi-protein complex within epidermal tissue. Cryosectioned, non-diseased human epidermal tissue samples will be fixed in 5% formalin and processed using immunohistochemistry. Antibodies that detect members of the skeletal muscle dystroglycan complex will be used to examine whether these proteins exist within epidermis. If these proteins are detected, their localization within the epidermis will be elucidated. The data will ultimately serve to characterize the dystroglycan complex in epidermal wounds. Our analysis of human skin wounds has revealed that dystroglycan is missing in cells at the edge of an incisional wound. Wound healing is a normal process through which dystroglycan is physiologically regulated. However, prior to studying the regulation of the epidermal dystroglycan complex, we must identify which of the several proteins known to comprise the skeletal muscle dystroglycan complex are present in the epidermal dystroglycan complex.

Poster Board No.019

ANALYSIS OF BRAIN STRUCTURAL CHANGES IN A COMMUNITY SAMPLE OF WOMEN WITH POSTTRAUMATIC STRESS DISORDER AS A RESULT OF CHILD ABUSE EXPOSURE.

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The long term effects of child abuse can deter brain development and function in adult abuse survivors. This study attempts to make a positive correlation between participants with post-traumatic stress disorder (PTSD) secondary to child abuse and reduced volumes in the hippocampus, pituitary, and caudate nucleus. Participants were recruited through newspaper advertisement and were right handed females between 20 and 40 years of age. Women who matched the study criteria, based on phone interviews, were screened using a demographics questionnaire and a variety of psychological testing including the *Childhood Trauma Questionnaire* and *Millon Multiaxial Clinician Inventory.* Those accepted into the study took the *Weschler Memory Scale*, *Wonderlic Personnel Test*, *Clinician Administered PTSD Scale*, and a magnetic resonance image of their brain. Women were then placed into one of three groups: post traumatic stress disorder as a result of child abuse (n=21), child abuse without PTSD (n=18), and normal controls (n=21). Each MRI slice of a brain structure was traced three times using the 3DBrainStation. Averages were calculated and summed to determine total volume of each structure. Demographic matching between groups showed no differences in age, body mass index, education, alcoholic drinks per year, and pack years smoking ($p>0.05$). There was no significant difference between the groups in hippocampal ($p=0.426$ left, 0.547 right), pituitary ($p=0.273$) and caudate nucleus ($p=0.622$ left, 0.959 right) volumes. Furthermore, PTSD diagnosis did not influence structural volume. The results show that child abuse may not be a detrimental factor in altering brain structural development in a community sample of women with posttraumatic stress disorder.

Poster Board No. 020

OBLIGATE BIODIVERSITY OF OHIO'S CARBONATE CAVES.

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