AGNR
FIVE STRATEGIC INITIATIVES

Ensure Healthy Watersheds and the Chesapeake Bay

- **Safely apply fertilizer, manure, biosolids, and other land-applied materials to protect water quality and soil health.**

- **Develop stormwater management technologies in the built environment to protect and conserve water resources.**

- **Create environmentally aware communities to promote interest and participation in environmental stewardship.**

- **Design land use management strategies to minimize negative environmental impacts.**

- **Adapt in the face of climate change to address sea level rise and extreme weather.**

- **Collaborate with partners across the watershed in the development of strategies for the protection of the Bay's living resources.**

COLLEGE OF AGRICULTURE & NATURAL RESOURCES

OVERVIEW

The health of the Chesapeake Bay is critical to Maryland and adjacent states' fisheries, wildlife, agriculture, and tourism industries. As such, it is also vital to the culture and economy of the region. The success of the effort to restore the Chesapeake Bay is largely dependent on reducing nutrient loads to the Bay from agricultural production areas and from the increasing area of developed land in the watershed associated with a growing human population. Bay health is further complicated by changing climate conditions and sea-level rise. These will require careful monitoring and assessment in order to adjust policies, programs, and projects to successfully achieve restoration goals for the Bay and its watershed.

University of Maryland's (UMD) College of Agriculture and Natural Resources (AGNR) is the primary agricultural research institution in Maryland and plays a critical role in supplying the knowledge-base needed to guide management strategies to reduce nutrient loads from agricultural, urban, and residential activities while maintaining productivity and economic viability. This critical role will continue into the future and become more challenging with intensification of agricultural production driven by a growing human population and market forces linked to increasing globalization of food production. AGNR also plays a significant role in developing science-based solutions to reduce the impacts of the expanding built environment. Implementation of these efforts happens locally. Extension staff in our local counties and Baltimore City work with research faculty to support environmentally and economically sustainable outcomes that benefit Marylanders and the entire Bay region.

AREAS OF FOCUS

The key to restoring the Chesapeake Bay lies in developing land use management strategies that minimize the transport of sediment, nutrients, and other contaminants into aquatic ecosystems. We must also take into account climate change and its impact on water quality, food systems, and human health. The health of non-tidal waters and the Chesapeake Bay depend on improved land use practices. AGNR has been involved in research, Extension, and education efforts

in agriculture since the beginning of the Bay restoration effort, including leading the development of no-till crop production, increasing nutrient use efficiency in crop and animal production, reducing phosphorus in poultry waste through diet modification, using cover crops to reduce nutrient losses and improve soil quality, and optimizing environmental benefits from riparian buffers. In recent years, the college's focus has expanded to include activities related to developed land use and climate change.

In fisheries and marine resources, AGNR and its partners have aided in the development of policy strategies that foster the efficient and sustainable use of the Chesapeake Bay's unique living resources. In the context of a warming climate and the progressive shift in species' ranges induced by higher temperatures, the need for innovative management solutions will become more pressing. Balancing agricultural, environmental, and human uses of the Bay in a sustainable way is our primary focus for the Chesapeake Bay and the watersheds that flow into it.

HIGHLIGHTS OF 2020

In 2020, our team launched a new seed grant program to support integrated research and Extension project ideas to generate extramural funding for AGNR and further Bay restoration. After a competitive selection process, funding was allocated for one integrated project on agricultural production and nutrient loads to the Bay. The team also has worked to identify target audiences for Bay-related research, Extension, and educational activities. We have focused on building our institutional capacity to communicate with these audiences and focused on webpage development and data analytics to understand how to convey AGNR's diverse activities.

TAKING ACTION

We will:

1. Initiate a new mini-grants program to support educational activities for students and other groups, such as field trips to experience the Bay firsthand, summer camp initiatives for K-12 students, and production of new curriculum or course materials.

2. Organize a Chesapeake Bay Career Fair Event where undergraduate students and youth audiences interact with career professionals, highlighting future college and career opportunities.

3. Create expansion of the Bay initiative website to provide new content for different target audiences, including career opportunities for prospective and current undergraduate students, environmental education activities for youth, and Bay related research and Extension projects for stakeholder groups.

4. Support the creation of short videos highlighting Bay related research projects and showcase these videos on our initiative website to inform stakeholder groups.

5. Provide a competitive seed grant program to foster and support multidisciplinary research and Extension projects to generate external funding.