Through the use of **surface**, airborne, and **space-based** observations, USRA scientists are studying the Earth’s **water cycle** and how it is interrelated to our **global climate** and **regional ecosystems**.

**WHO ARE WE?**

USRA is an independent, nonprofit research corporation where the combined efforts of in-house talent and university-based expertise merge to advance space science and technology. USRA works across disciplines including **biomedicine**, **astrophysics**, and **engineering** and integrates those competencies into applications ranging from **fundamental research** to **facility management** and **operations**. USRA engages the creativity and authoritative expertise of the research community to develop and deliver sophisticated, **forward-looking solutions** to Federal agencies and other customers - on schedule and within budget.

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**HYDROLOGIC CYCLE STUDIES**

USRA researchers are extending the use of surface, airborne, and space-based observations along with the **full range of models** to contribute to better understanding of variations in the hydrologic cycle and feedback between the **hydrologic cycle** and the Earth’s total **energy budget**.

**WATER QUALITY**

Researchers are focused on six priority issues: **water quality**, habitat conservation and restoration; **ecosystem integration** and assessment; **nutrients and nutrient impacts**, coastal community resilience; and environmental education.

**COASTAL ZONE MANAGEMENT**

Current studies using remotely sensed data, **spatial-growth**, and hydrologic models focus on the **impacts of urbanization** on sea grasses and submerged aquatic vegetation. USRA scientists will use data on urbanization’s impact on regional hydrology and **sensitive environmental resources** by evaluating the impact of freshwater flows into Mobile Bay on salinity and temperature.

**SOIL MOISTURE RESEARCH**

Through evaporation and plant transpiration, soil moisture is an important factor in the exchange of water and heat energy between the land and the atmosphere. By improving **forecast models**, USRA research in this area will help meteorologists and scientists better **predict droughts**, landslides and floods, and will help farmers determine irrigation plans to **enhance crop yields**.

**HYDROSPHERIC SCIENCE**