ELEMENT 13 **CONSERVATION**

Goal 1

To ensure the conservation, protection, and wise use of all natural ecosystems and natural resources on the University campus and in the context area.

Objective 1A

Protect air quality.

Policy 1A-1

FAU shall develop a strategic plan for reducing the use of single occupant internal combustion vehicles for commuting. The strategy shall include incentives for encouraging the use of alternative modes of transportation such as Co-Tran, Tri Rail, FAU Shuttle, car pools, electric vehicles, bicycles, and other human-powered modes of transportation (i.e., close-in HOV parking plan). Upon completion of the strategic plan, the adopted campus master plan shall be amended as necessary to include the results of the strategic plan.

Policy 1A-2

In conjunction with Policy 1A-1 above and Transportation Element policies, FAU shall develop a concurrent strategic plan for replacing parking lots with parking garages. The combination of fewer commuter vehicles and parking garages will enable space presently used for parking to be used for more environmentally favorable applications. Upon completion of the strategic plan, the adopted campus master plan shall be amended as necessary to incorporate the results of the strategic plan to replace parking lots with parking garages. The space that is no longer used for surface parking will be designated on the Conservation Element and Habitat Zone maps for environmentally favorable uses such as open space or wildlife habitat and/or corridors.

Policy 1A-3

The University shall develop a plan for converting its vehicle fleet to less polluting fuels (i.e., electric, LNG, hydrogen, etc.) by the year 2008. The adopted campus master plan will be amended as necessary to reflect the results of the plan.

Policy 1A-4

The University shall over the next decade double the number of trees on campus, placing them in appropriate areas. Of the 100% of additional trees, the University will place 50% of the total added trees in the Academic Core Landscape, 15% of the total added trees in the Transitional Landscape, and 35% of the total added trees in the Perimeter Landscape in order to enhance the campus green and create a tree canopies.

Policy 1A-5
Maintain and/or restrict use of fossil fuels to natural gas for heating and utility purposes.

Policy 1A-6
Encourage increased use of public transportation by faculty, staff, and students.

Policy 1A-7
Design and maintain utility plant, laboratory, and other facilities that use exhaust ducts for air discharge, to minimize the discharge of pollutants. FAU shall install appropriate filtering devices on fume hoods and minimize the storage and use of volatile and hazardous materials in campus buildings.

Policy 1A-8
FAU shall implement a program for the monitoring of both indoor and outdoor air quality. Indoor sampling shall occur at chemistry laboratories, kitchens, and other sites where fumes are produced. Outdoor sampling sites shall include parking lots and congested intersections. Failure to meet air quality standards adopted by the Florida Department of Environmental Protection (FDEP) shall result in an assessment of the probable cause and the preparation and implementation of a plan to improve and maintain air quality.

Objective 1B
Conserve, appropriately use, and protect the quantity and quality of current and projected water sources.

Policy 1B-1
Study the feasibility of maintaining water levels in lakes and ponds through the use of reclaimed wastewater (gray water). Amend the adopted campus master plan as necessary to include the results of this study.

Policy 1B-2
Continue to expand the use of the existing reclaimed wastewater (gray water) for irrigation for campus landscape and lawn watering to reduce the use of well groundwater.

Policy 1B-3
Conserve water resources and reduce chemical use through the use of xeriscape design principles including:

- Use of drought tolerant non-invasive and native plant material;

- Use of low volume delivery fixtures;
- Zoned irrigation systems;
- Moisture sensors and rain switches;
- Use of drought tolerant ground cover;
- Use of canopy trees where appropriate; and
- Use of soil amendments and mulch to enable soils to retain moisture.

Policy 1B-4
FAU shall continue to mitigate the impacts of University-generated stormwater and minimize stormwater-borne pollutants through the implementation of a system of Best Management Practices, which includes but is not limited to:

- Incorporating stormwater management retention and detention features into the design of parks, trails, commons, and open spaces, where such features do not detract from the ecological, recreational or aesthetic value of a site;
- Use of slow release fertilizers and/or carefully managed fertilizer applications timed to ensure maximum root uptake and minimal surface water runoff or leaching to groundwater;
- Educating maintenance personnel about the need to maintain motor vehicles to prevent the accumulation of grease and other fluids on impervious surfaces, where they might be conveyed to surface or ground waters by runoff, and the need to regularly collect and properly dispose of yard debris;
- Avoid the widespread application of broad spectrum pesticides by involving only purposeful and minimal application of pesticides, aimed at identified targeted species;
- Coordinating pesticide application with irrigation practices to reduce runoff and leaching to ground water;
- Use of turf blocks to minimize impervious surface area; and
- Incorporating features into the design of fertilizer and pesticide storage, mixing and loading areas that are designed to prevent/minimize spillage.

Policy 1B-5

Establish procedures to guard against accidental dumping or spillage of oils, solvents, paints, or other by-products of Physical Plant.

Policy 1B-6
Properly dispose of contaminants; do not deposit them into septic fields or other groundwater recharge areas (i.e., retention basins).

Policy 1B-7
Minimize facility development in floodplain areas; limit construction to facilities which have relatively small impacts on the floodplain, such as recreational and athletic fields.

Policy 1B-8
~~Implement the results of the Irrigation Study performed by Williams, Hatfield Stoner, Inc., dated to~~ Reduce/eliminate the use groundwater wells for irrigation

Policy 1B-9
Protect and conserve floodplains by ensuring their use for only appropriate uses, such as wild life habitat, casual athletic fields, green spaces, parking, etc. FAU does not have rivers or wetlands on its Boca Raton Campus.

Policy 1B-10
The University shall not undertake activities on campus that would contaminate groundwater sources or designated recharge areas unless provisions have been made to prevent such contamination or otherwise provide mitigation for such activities so as to maintain established water quality and quantity.

Policy 1B-11
Design catch basins for stormwater to include weirs to trap floating debris.

Policy 1B-12
Institute a stormwater drainage system maintenance program. The program shall ensure the appropriate passage and retention of stormwater, as well as the maintenance of a vegetative or hard-surfaced base for the control of erosion.

Policy 1B-13
The University shall continue to implement a comprehensive water conservation program, to include:

- compliance with SFWMD conservation program requirements;
- limiting the hours of outdoor irrigation;
- the use of treated wastewater effluent for an expanded campus irrigation system;

- the use of automated timers and other irrigation flow monitoring equipment;
- xeriscape landscaping procedures for new building construction and common areas; and
- the use of ultra-low volume fixtures in new building construction.
- the elimination of groundwater wells for irrigation purposes.

Objective 1C
Conserve and appropriately use energy.

Policy 1C-1
Continue to improve energy conservation on the campus through improved facility maintenance.

Policy 1C-2
Develop and implement a strategic plan for evolving into a paperless (electronic) University community. The adopted campus master plan shall be amended as necessary to incorporate the results and recommendations contained in this plan.

Policy 1C-3
Implement and continue to monitor on a follow-up basis the Campus-Wide Energy Surveys funded by Florida Energy Office, which will identify and prioritize energy savings measures and projects.

Policy 1C-4
Pursue cogeneration of electricity and the generation of steam from waste heat where it can be demonstrated that energy savings will result.

Policy 1C-5
Seek Florida Energy Office grants to assist in the upgrading of equipment and studying of procedures to save energy.

Policy 1C-6
Institute review procedures for mechanical and electrical equipment replacement that shall guarantee improved energy efficiency with the incorporation of new equipment.

Policy 1C-7
Upgrade campus chillers and boilers to more efficient equipment.

Policy 1C-8
Consider the use of Palm Tran "fare-free" zones to encourage the use of mass transit on and to the campus.

Policy 1C-9
Encourage walking and biking on campus through Transportation Element policies designed to reduce dependence on the single-occupant automobile as the primary transportation mode.

Policy 1C-10
Expand, enhance, and promote existing administrative and operational procedures to conserve energy and minimize future demand, under the leadership of Physical Plant.

Policy 1C-11
The University will continually evaluate "green lights" programs. Annually, a list of programs will be developed which are feasible within funding provided by s.~~235.435~~1013, F.S. The adopted campus master plan will be amended as necessary to include results of this study.

Policy 1C-12
During the next five years, pursue grants and design for a photovoltaic demonstration program.

Policy 1C-13
Energy conservation fixtures, air conditioning and lighting systems, and other building specific energy use and management techniques shall continue to be a required element of all new buildings on campus.

Policy 1C-14
Determine and implement appropriate measures to assist compliance by all University community members with the Florida Solid Waste Management Act of 1988. This will include efforts to expand, enhance, and promote existing programs to recycle suitable materials collected on campus, as well as the recycling of materials other than those currently collected on campus.

Policy 1C-15
Strategically locate shade trees to mitigate passive solar radiation and to funnel breezes.

Objective 1D

Conserve, appropriately use, and protect native vegetative communities and wildlife habitat.

Policy 1D-1
The University's Conservation Committee has designated various areas of environmentally sensitive land and wildlife habitat for protection. These areas are indicated on **Figure 13.~~2~~2**, Valuable Conservation and Open Spaces. These areas shall be set aside as open space preserves for native plant communities, burrowing owls, gopher tortoises, and other plant and animal species that are listed as endangered, threatened, rare or species of special concern by Federal, State, regional or local agencies. These areas shall remain protected from development and all other activities that may diminish their natural values and functions.

Policy 1D-2
Continue to follow a management plan for the protection of native plant communities and endangered, threatened, and rare plant species. This plan shall be coordinated with the Florida Game and Fresh Water Fish Commission, FAU Conservation Committee, and other appropriate governmental entities to ensure the proper management of plants identified on the "Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida", which is updated periodically by the Florida Game and Fresh Water Fish Commission. The adopted campus master plan shall be amended, as necessary, to include the results of the Native Plant Community management plan which is included in the appendix of this document.

Policy 1D-3
Continue to follow management plan for protection of campus native wildlife, including all endangered, threatened and species of special concern (particularly gopher tortoises and burrowing owls). The management plan addresses management needs within designated habitat areas, within designated shared habitat/recreation areas, and in all areas outside these designated areas. This plan shall be coordinated with the Florida Game and Fresh Water Fish Commission, the FAU Conservation Committee, and other appropriate governmental entities to ensure the proper management of wildlife identified on the "Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida", which is updated annually by the Florida Game and Fresh Water Fish Commission. The adopted campus master plan will be amended, as necessary, to include the results of the wildlife management plan which is included in the appendix of this document.

Policy 1D-4
The areas in **Policy 1D-3** shall be set aside to serve also as areas for aquifer recharge and shall be protected from development or other activities which would affect this function.

Policy 1D-5

Alternative recreational activities shall be encouraged to minimize the need for construction of athletic fields.

Policy 1D-6
It is the intent of FAU to remove all non-native invasive plants (whether trees, grasses or shrubs) which are identified on the Exotic Pest Plant Council's "Florida's Most Invasive Species List" from the campus grounds. The University is preparing a plan to remove invasive, destructive plant species from all areas of the campus. The results of this plan shall be incorporated in and/or coordinated with the Native Plant Community and Wildlife Management Plan(s). The preparation of this plan shall be coordinated with the FDEP and other appropriate governmental entities to ensure the proper removal and disposal of these non-native invasive plants. The adopted campus master plan will be amended, as necessary, to include the results of the Invasive and Destructive Plant Species Plan.

Policy 1D-7
In order to protect wildlife and vegetative communities in the interim while management plans are being developed, during the initial planning phase of any physical change to the campus, the University shall perform a census of wildlife and plants in the area to be affected. Plants or animals identified "Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida" will be noted and the appropriate agencies will be notified, as identified in the Florida Game and Fresh Water Fish Commission's "Wildlife Methodology Guidelines" (January 15, 1988). The Environmental Coalition Steering Committee will provide input regarding facility development projects to Facilities Planning until the management plans are in place.

Policy 1D-8
The University in any designation of its property as environmentally sensitive land will continue to base its decisions on Federal and State guidelines plus the expertise of the Biology Department and the University's Conservation Committee.

Policy 1D-9
Continue to maintain owl and other wildlife monitoring programs. The FAU Biology Department currently conducts monitoring programs of burrowing owls and gopher tortoises. These programs seek to document population size, structure and health; habitat needs; nesting sites; foraging/hunting areas; and patterns of reproduction.

Policy 1D-10
Adopt a plan to remove destructive invasive animal species from campus. The campus master plan will be amended as necessary to include the results of the plan.

Policy 1D-11

Designate and preserve flight corridors for owls, where possible. ~~by means to be determined in a study to be completed by the end of 2002. The conservation map will be amended as necessary to document the results of the study.~~

Policy 1D-12
Because of proximity to the airport and I-95, fire dependent plant communities in campus natural areas may not be prescribed burned however small isolated burns should be explored.

Objective 1E
Protect and conserve the natural functions of soils, rivers, floodplains, and wetlands.

Policy 1E-1
Protect soils by requiring construction practices that minimize soil erosion caused by water or wind. Such practices may include the use of erosion screens; sod, seed, or mulch; phasing and limiting the removal of vegetation; minimizing the amount of land area that is cleared; or wetting soils to prevent wind-borne soil erosion. Strategies for minimizing soil erosion shall be included in the Soil and Water Resources Protection Guidelines.

Policy 1E-2
Protect water quality in the El Rio Canal and in the Lake Worth Drainage District L-46 Canal. Coordinate with the Lake Worth Drainage District and South Florida Water Management District to protect the El Rio Canal from activities that may adversely impact its water quality and other values and functions (e.g., wildlife habitat).

Policy 1E-3
Protect water quality in lakes. All new and existing lakes shall be provided with vegetated littoral zones composed of native vegetation. All lakes shall be managed to provide wildlife habitat and support viable populations of native plant and animal species.

Objective 1F
To maximize on-campus reclamation of hazardous materials and consumer products.

Policy 1F-1
All University buildings shall be designed with facilities to accommodate collection, storage and disposal of recycled materials.

Policy 1F-2

The University shall coordinate on-campus recycling programs with those of local government in regard to materials collected, and disposal/collection procedures.

Policy 1F-3
The University shall provide on-campus facilities for the collection and storage of hazardous materials used in University operations as required by federal, state and local regulations.

Policy 1F-4
The University shall encourage academic programs that promote awareness of environmental impacts of resource recycling.

Policy 1F-5
The University shall implement hazardous materials handling and storage procedures to include as a minimum the proper containerization, classification and labeling of all hazardous waste.

Policy 1F-6
The University shall utilize only licensed hazardous waste transportation and disposal companies.