SuperGeo®
GIS Software & Solution

Coastal Ecological Environment Information Investigation System

Scenario

In 21st century, people started to acknowledge the importance of coexistence between social development and natural environment because the actions of human might cause irrevocable impact to the natural environment. Therefore, it is a key aspect to achieve the balance between social and economic development as well as ecology to maintain a sustainable development nowadays.

Located in HsinChu City, Hsiang-Shan Wetland is 1,600 hectares and is the biggest seashore wetland in northern Taiwan. Hsiang-Shan Wetland has abundant organic materials to attract many species to inhabit here. According to the record, 277 kinds of resident birds and migratory birds, including some endangered species and rare species, can be found here. In addition to birds, crabs are the other main species in Hsiang-Shan Wetland. Currently, there are more than 40 kinds of crabs, including nearly two hundred and fifty million crabs inhibiting here.

Hsiang-Shan Wetland has a plentiful ecological system, but how to balance ecological protection and economic development becomes an important and serious issue. To solve this issue, the related unit constructs a geographic information system for analyzing and integrating related resources to significantly minimize the impact on ecology environment and human economy. Thus, the system can also be the base of environmental management of ecological specialization.

Solutions

Coastal Ecological Environment Information Investigation System is a field survey system, adopting SuperPad to be the platform for collecting data.

SuperPad is a mobile GIS, supporting field surveyors to draw map, use GPS navigation, collect data etc. in the field. Therefore, the first –hand data can be collected quickly and efficiently. To make the applications of SuperPad meet the demands of field-workers, SuperPad Studio is applied to customize SuperPad. Users can customize user interface and forms further by SuperPad Studio according to their needs so that the efficiency of field survey can be raised.

Wetlands has abundant organic materials to attract many species to inhabit.

Solutions

- Coastal Ecological Environment Information Investigation System adopts Mobile GIS technologies for collecting data.
- With customization capability of SuperPad Studio, the usage efficiency of SuperPad would be raised and the usability can confirm field personnel's needs.

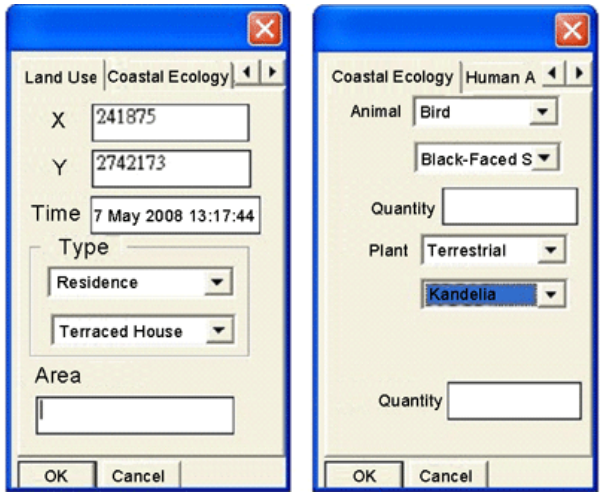
Results

Coastal Ecological Environment Information Investigation System is a mobile GIS platform using SuperPad as the main operation system for surveying in the field. The mass of data and the complex investigation items are big challenges that need to be overcome when constructing Coastal Ecological Environment Information Investigation System. In this case, SuperPad Studio is applied to customize user interface and forms according to users' needs. Therefore, work efficiency of field-workers can be raised consequently.

Coastal Ecological Environment Information Investigation System has an easy-to-use user interface. Moreover, Coastal Ecological Environment Information Investigation System offers basic GIS tools, such as Zoom In/Out, Pan, Query, Add Layers etc., to allow field-workers to navigate map on mobile devices.

In recent years, GPS becomes an indispensable equipment for doing field survey. Coastal Ecological Environment Information Investigation System supports GPS Position function; therefore, surveyors can not only understand current position but add new features or edit the coordinates of features by receiving GPS signal.
The main goal of Coastal Ecological Environment Information Investigation System is to survey the ecology and land-use data in the coastal environment. Hence, three categories of investigation items are covered in this system and they are: Land-Use, Coastal Ecology and Human Activity. Surveyors can use GPS to record the position coordinates and survey time so that other surveyors can clearly understand the historical record of survey data by the records of spatial and time dimension. Regarding investigation items, different topics contain different items, such as land-use types, land-use area, the name and number of plant and animal species, human activities etc., to achieve the completeness and comprehensiveness of the analysis of coastal environment. These survey results can be consequently queried on mobile device or output for analysts to analyze in depth on more powerful computing environment.

The construction of Coastal Ecological Environment Information Investigation System assists field-workers in effortlessly collecting ecological and environmental related data of Hsiang-Shan Wetland. Through the collected data, analysts can effectively predict the impacts on ecological environment that might cause by economical and land development and monitor the carrying capacity of development. The impacts on ecological environment and human economy can be minimized. To sum up, Coastal Ecological Environment Information Investigation System is an efficient way to achieve the balance between ecological environment and social development and it can also be considered as the research base of environment management of ecological spatialization.



Developed by SuperPad Studio, developers can easily customize user interface and forms according to users' needs.

Results

- SuperPad Studio allows users to customize user interface and forms to meet their needs.
- Coastal Ecological Environment Information Investigation System provides three categories of investigation items, including Land Use, Coastal Ecology and Human Activity.
- Coastal Ecological Environment Information Investigation System supports GPS Position function for users to clearly understand current position and edit the coordinates of features.

Software Used

SuperPad

SuperPad Studio

SuperGeo® GIS Software & Solution