Use-case Scenarios for ISN

Tribal Government of St. Paul Island | BeringWatch Programs

Document Description

These use-case scenarios are provided to help paint a picture for how ISN can be used as envisioned long term.

Field Observer / Data Collector

Doug, a member of the Yukon tribe, dedicates 3 days a week to collect data for the northern nesting seabirds study. This study was commissioned by the Audubon Society to record species variety, numbers of nesting pairs and geographic distribution of northern seabirds. As a paid study, Doug is able to supplement his income while following his passion for protecting the environment.

Today Doug is using his skiff to explore the estuary of a local river system looking for signs of birds, documenting observations and photographing nesting sites. He enters these observations, including required, auto-populated metadata such as GPS coordinates, date, time, weather, etc., into the “Northern Seabird Nesting Study” he has pulled up on his ISN mobile app. As he motors up a slough of the estuary, he spots several dozen harbor seals that were not in the area last week so he selects the “Pinniped Observation Study” on his ISN app. This is an unpaid local study commissioned by the environmental director from his tribe who is trying to ascertain how much of an effect seals and sea lions have on returning salmon runs. From a dropdown menu in the ISN app and enters his observation including a count of the harbor seals present broken down by age-class and gender and a picture he took to verify the count data. He also records the behavior he observes - the seals appeared to be foraging on an unidentified species of salmon which he also records in the species interaction field. Finally he records that the seals were not in the area the previous week in the Trend and Period fields designed to capture local knowledge.

As he continues his observations and data entries for the Seabird Study, Doug notices a large flock of several thousand Arctic Terns feasting on a large school of juvenile salmon as they navigate the estuary during their out-migration to the ocean. Within his same ISN App, he navigates to the Seabird study he knows his neighboring tribe is passionate about. He snaps a picture and populates the required fields: species, count, behavior, and interaction species. He also provides anecdotal notes in the comments that in his observations, in over 20 years in the area he's never seen such a large flock of Terns trapping and decimating a school of juvenile salmon. He suspects the commercial overharvest of herring in local waters has caused the Terns to focus their feeding on the juvenile salmon and worries about the future of the salmon run if these current trends continue.

Later that evening, once he's returned to town and internet connectivity, the ISN app syncs his day's work with the study database and he corrects a few entries that were auto flagged by the system as being outside of acceptable parameters. He then checks his profile and sees that he's earned $278 this week for his contributions to the Seabird study.

Tribal Environmental Director

Linda, the environmental director for the Kenaitze tribe, is utilizing the ISN platform to launch a field research project to track how far up the Kenai river seals and sea lions travel in pursuit of diminishing salmon runs and if their movements more heavily follow the sockeye, chinook or coho runs. She browses programs already on the ISN platform, and couldn't find one that exactly fit the needs of her Tribe.

Logging in to her administrative portal of the ISN platform, she creates a new study. She names it "Kenai Seals Salmon Hunting", tags it so it's clear it involves the Kenai River, Seals, and Salmon and configures the data collection survey by drawing from a pre-configured set of data-entry fields. She also adds the ability for researchers to provide anecdotal posts if they observe related items of interest not specifically addressed in the research project. To increase the geographic reach of the study she shares it with the ISN platform and invites neighboring tribes located upstream along the Kenai river system to participate in the study. Two of the tribes she knows have participated in other studies and are regular users of ISN. The system will invite the third tribe to set up an account on the platform in order to participate. She marks the study for shared data access among the participating tribes. After providing an introduction, purpose and data collection protocol of the study, she pushes it out to her network of registered field researchers along with a note for them to invite other interested parties to register as observers as well knowing that this initiative will drive more interest locally than previous studies and views it as an opportunity to expand her network of local researchers/observers.

Next she reviews a request for paid research using the ISN platform initiated by the University of Alaska Anchorage, accepts the study and pushes it out to her core group of trained field researchers for execution.

Finally, Linda pulls a preliminary report on the Seabird study utilizing the Business Intelligence (BI) reporting tools built into the platform and prints out Doug's anecdotal observations regarding the decimation of out-migrating juvenile salmon so she can bring this developing environmental issue to the attention of the tribal counsel during their meeting that evening.

Environmental Organization

Richard, Research Associate for the Alaska Dept of Ecology, is tasked with researching the spread of invasive and damaging plant species and correlating that with the impact of global climate change. He logs in to his administrative portal on the ISN platform and configures a study to be pushed out to all land-based tribes and research groups on the platform for data collection. In the background and protocol attached to the study he provides a list of plants of interest along with identifying photographs to assist field researchers in recognizing them. When putting together the survey format he configures it to require photographs of the plants and selects the option to have the photographs run against the AI-empowered botanical database for positive identification. He also makes GPS coordinates a required field that will be auto-populated and attached to each photograph. Once configured, Richard submits it to the Head of Research for a final scientific and grant parameter review before releasing it to the participating ISN network for execution. As he is working with a federal grant Richard has a research budget he funds the research effort with. He sets a budget per participating tribe as well as a per-observation payout amount which will be used to compensate individual field researchers.

Three months later at the conclusion of the invasive plant study, Richard using the platform's built-in reporting tools to produce a geographic distribution map with supporting summary breakout data. He is able to use the data fusion tools to compare and contrast the results with historical study data and produce an animated map showing the spread of invasive plants of the past decade and correlate that with historical water temperature, air temperature and precipitation data to make a strong cause / effect case for discussion at the upcoming federal meeting to review the environmental effects of climate change.