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Army Corps tackles flooding

Push is on for more restoration projects to help environment

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The U.S. Army Corps of Engineers is making a stronger effort to expand its flood-mitigation projects to include ways to restore the state's natural water flow systems and improve the environment.

Many of the projects are still years off from starting and depend heavily on federal funding. But the relatively recent efforts of the Corps mark a significant departure from past strategies, and those involved in marine habitat conservation say such changes can go a long way toward preserving certain coastal ecosystems.

"In the last year or two we really have pushed more for restoration projects than we ever have in the past," said Derek Chow, chief of the civil and public works branch at the U.S. Army Corps of Engineers Honolulu District. "Now (restoration) is a very big deal for the community and the public, and we're in step with them on that."

"What we are doing is looking at these urban areas where flooding is a problem and not only trying to find a way of mitigating that flooding to protect the built environment, but do it in a way that we can try to build back some of those natural processes."

The Corps is currently evaluating ways to do this at the Kuli'ou'ou and Wailupe streams — which discharge into Maunalua Bay — and Palolo, Manoa and Makiki streams, which feed into the Ala Wai Canal.

"We're in the process of evaluating not only what is the problem — flooding and environmental degradation — but what are the remedies," Chow said. "Is it putting in channels, is it restoring the flood plain, is it creating detention basins where not only we capture water but we also capture debris and sediment, the re-creation of wetlands and flood plain areas where water can deposit itself during high flows but that water can naturally percolate back into the ground and/or the plants in that area have an ability to uptake some of the nutrients that we want to prevent from entering into the marine environment."

restoration planned

In the case of the Wailupe and Kuli'ou'ou streams, the Corps initially planned the work as just a flood-control project. State and federal officials had urged measures like concrete channelization of the stream and floodwalls, which conservationists and environmental group Malama Maunalua said would increase runoff.

But after talking with the community, the Corps is working with Malama Maunalua and state and city officials on the possibility of building restoration into the project, Chow said.

But these projects are still a ways off. Chow estimated that evaluations of the Kuli'ou'ou and Wailupe streams will take another three to four years to be completed, and that the evaluation of the Ala Wai watershed project would take another two to three years. The Corps will request design and...
construction funds after the evaluations are complete.

The Ala Wai project has been estimated to cost anywhere from $50 million to $100 million, and the Wai'alupe project is estimated to be up to $50 million, Chow said. He said it's too early to estimate a cost for the Kuli'ou'ou project, but said it would be in the tens of millions of dollars.

Those involved in marine habitat conservation say most of the current drainage systems have contributed to problems affecting coral reefs.

"One of the big challenges that we've had in the Islands is that we keep adopting all this western science, and that engineering is designed to get water off of land as fast as possible," said Gerry Davis, assistant regional administrator of the Habitat Conservation Division for the Pacific Islands Regional Office with NOAA Fisheries. "Water is a precious resource. We should be saving every single drop that we can."

**beyond flood control**

Davis and Bob Richmond, research professor at the University of Hawai'i's Kewalo Marine Laboratory, are working with the Corps on these issues and are scheduled to speak at the annual Army Corps meeting this month.

"We're just delighted that the conversation is there, that they're willing to listen, that we're able to coordinate and communicate with them and share information," Richmond said.

Quickly funneling water through drainage systems that ultimately dump into the ocean does a lot of damage, they said. Fresh water alone harms coral reefs, and runoff carries sediments, bacteria and pollutants. Sediments smother the reef, and waves pick the particles up and resuspend them again.

"The whole idea here is to say it shouldn't just be about flood control alone, but how do you do flood control and resource protection?" Richmond said.

"We have much better knowledge than we did in the past, and it's time to make sure that that knowledge is shared with people who can use it in a constructive fashion to address these issues," he said. "Otherwise we not only lose resources now, but we've taken away the legacy for future generations."

The Corps is also looking at other, nonurban areas for integrating restoration with flood control.

For example, the Corps is moving ahead on plans for wetland and bird pond restoration at Kaunakakai Stream on Moloka'i. The project, estimated to be about $1 million and expected to begin next year, involves modifying the existing drainage system to capture more water that can percolate into the ground, reduce sedimentation and encourage wetland plant growth, Chow said.

The Corps is also requesting funding for watershed studies in the Waimea, Kekaha and Anahola areas on Kaua'i, the West Maui area, and the Waialua-Kaiaka watershed on O'ahu.

Even though the Waialua-Kaiaka channels, especially in the upper portions, are mostly natural, there's still a problem with water dumping undesirable elements into the water, Chow said. For example, fallow agricultural lands are contributing to sedimentation problems and chemicals like fertilizers are running into the ocean, he said.

The Corps is also looking at areas that are subject to development pressures, Chow said. He said the Army Corps of Engineers is charged with creating long-term, comprehensive solutions rather than immediate actions.