

Example of Successful Habitat Restoration/Wetland Creation at Midway Atoll National Wildlife Refuge:
"Monument Seep" on Eastern Island
J. Klavitter, USFWS, January 18, 2007



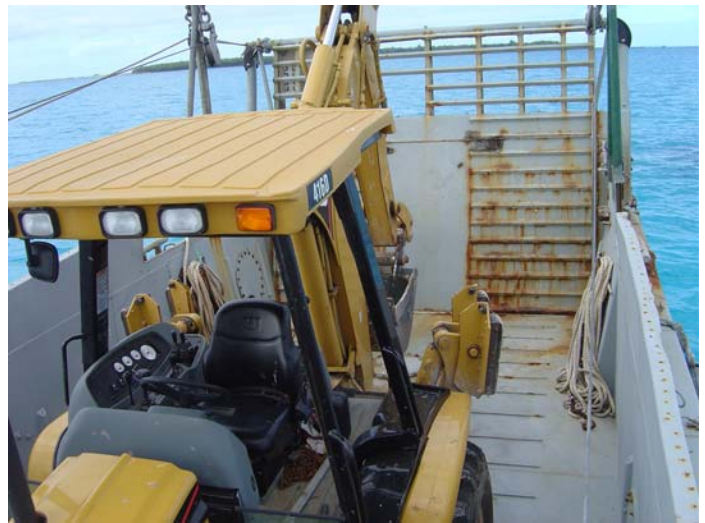
July 2004. Invasive plant *Verbesina encelioides* throughout area.



July – August 2004 *Verbesina* hand-pulled.



September 2004. *Verbesina* cleared and piled.



October 2004. Landing craft is used to transport backhoe to Eastern.



October 2004. Backhoe digs 10 ft down into freshwater lens.



November 2004. 60 hours digging with backhoe. Water 3 ft deep.



September 2004. Native Bunch Grass & others grown in greenhouse.



March 2005. Native grass and sedge planted and fenced.



April 2005. Nonnative cattle egret nesting is eliminated.



April 2005. Native plants begin to take hold.



August 2005. Laysan Duck aviary constructed.



April 2005. Migratory scaup using wetland. Plants growing.



October 2005. Native plants growing. 16 Laysan Ducks released.



Spring/Summer 2006. Laysan Ducks nest on Eastern Island.



October 2006. Restoration Complete.
Native plants mature and reintroduced and fledged Laysan Ducks present.

- Notes:
- Habitat was restored and freshwater wetlands were created at a total of 12 sites (9 on Sand Island, 3 on Eastern Island) at Midway Atoll NWR from August 2003 to October 2006.
 - Surface area and depth of the wetlands ranged from 16 – 480 m² and 27– 90 cm, respectively.
 - Salinity ranged from 0.1 – 3.4 ppt.
 - A total of 42 Laysan Ducks were reintroduced to Midway between 2004 and 2005. Successful breeding has occurred on Sand and Eastern Islands. Total population as of January 2007 is 104.