# Humboldt - Del Norte Weed Management Area Grant Proposal
# for 2009/2010 Supplemental Project Proposal

**Counties covered in this Proposal:** Humboldt and Del Norte

**Primary Contract Lead Person(s)** (name, phone number, and address):
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**Project Leads** (name, phone number, and address):
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***Project 2:*** Ms. Stassia Samuels, Plant Ecologist, Redwood National and State Parks, P.O. Box 7, Orick, CA 95555. (707)465-7784; stassia_samuels@nps.gov\

**WMA Structure and Partners:**
The Humboldt Weed Management Area was formed in 1999, with the first Memorandum of Understanding (MOU) completed in 2000. A total of 13 governmental and non-profit groups signed this original MOU. In 2004 the WMA expanded its boundary to include Del Norte County. Due to this expansion many additional land managers became interested in being involved with the WMA. The current MOU now includes a total of 25 government agencies, non-profit groups, and private land managers. Currently the listed partners on the MOU include:

> U.S. Bureau of Land Management, Arcata Field Office; California Department of Fish and Game, Region 1; Humboldt County; California Department of Food and Agriculture; California Department of Parks and Recreation, North Coast Redwoods District; California Department of Transportation, District 1; Del Norte County; Natural Resource Conservation Service; Humboldt County Resource Conservation District; Friends of the Dunes; Humboldt - Del Norte Cattlemen's Association; Center for Natural Land Management; City of Arcata; Manila Community Services District; National Park Service, Redwood National Park; City of Eureka; U.S. Forest Service, Six Rivers National Forest; PALCO; U.S. Fish and Wildlife Service, Humboldt Bay National Wildlife Refuge; UC Cooperative Extension; North Coast FOREST Association; Mattole Restoration Council; Yurok Tribe; Mid Klamath Watershed Association; California Native Plant Society, North Coast Chapter

During the formation of the original WMA, an organizational structure and 5 year strategic plan was developed. This organizational structure included committees and a hierarchy. The committees currently include Education, Mapping, Strategic Planning/Governance, Grants, and Steering. The Steering Committee acts as an umbrella for all of the other committees. Each of these other committees reports to the Steering Committee. The Humboldt Del Norte WMA (HDNWMA) is lead by a coordinator, Jennifer Wheeler, BLM, with assistance from other steering committee members. Steering committee meetings are held regularly (at least 4 and up to 8 times a year) and larger public meetings are held biannually. The Steering Committee is made up of the active members from the groups included on the MOU. Current active partners include:

> Humboldt County Department of Agriculture, Humboldt County Department of Public Works, Del Norte County Department of Agriculture, California Department of Transportation, Bureau of Land Management, Arcata Field Office, UC Cooperative Extension, Redwood National Park, US Forest Service, Six Rivers; California State Parks, and U.S. Fish and Wildlife Service, Humboldt Bay National Wildlife Refuge.

Most of the other committees meet at least once a year and at times more frequently, depending on active projects. The Strategic Planning/Governance Committee was formed in 2004 for a variety of reasons. At this time the WMA expanded to include Del Norte County and other partners. The Steering Committee determined that new partners should have a clear understanding of the HDNWMA strategic plan and governance processes. The Strategic Planning/Governance Committee has completed many tasks recently and is still working on others. These tasks include:

MOU (Completed and active, but still waiting for a one more signatures- and adding three new signatory members); Updating the HDNWMA Project Criteria List (Completed 2005, on website); Updating the HDNWMA Organizational Chart (Completed 2004, on website); Updated HDNWMA Voting Process and Guidelines in Governance (Completed 2008); Developing a HDNWMA Priority Weed List with a rating system (Completed 2006, on website); Updating the existing Strategic Plan (Completed 2006, approximately 90% of tasks have been completed); Developing a new 5 year strategic plan (In progress); Continuously updating the HDNWMA Website (Ongoing); and Hiring a new HDNWMA coordinator that will be mentored and supported by HDNWMA steering committee (position will last from mid-August 2008 through December 31, 2009, and is extendable if all parties agree).

**Past Performance of WMA and Partners in Weed Control:**
Since 2000 the HDNWMA has completed many weed related projects involving multiple partners. These projects have included weed mapping, control, and educational outreach projects. The mapping and educational projects are taken up in committee and each control project is conducted by one of the WMA partners. The Education Committee has completed many educational projects since 2000, with many of them being annually events. Some these projects include the Weed Awareness Week, a weed display at the Humboldt County Fair and the CNPS Wildflower Show, and a Humboldt County Weed Booklet. The mapping committee has completed a Humboldt County wide weed map, showing where most of the roadside weeds exist. Table 1.0 **(See Attachment A)** summarizes most of the HDNWMA weed projects that occurred between 2000 and 2008. Many more weed related projects have occurred throughout Humboldt and Del Norte County during this time period and more information on those can be found at the HDNWMA website under the yearly report section.

**General In-kind contributions:**
The HDNWMA has an active group of partners and has met 7 times in the past 12 months. The WMA is looking forward to hosting their next community meeting that shall with guest speakers discussing integrated control methods, alternative control methods, such as the Waipuna, and an update on the happenings of the HDNWMA. The HDNWMA has projected over the period of this proposed grant (not counting expenses included as in-kind line items in the budget) that the HDNWMA in-kind contribution will be **$354,248.00**. This includes time and mileage for all HDNWMA meetings, HDNWMA educational events, and cooperative control projects involving more than one member of the HDNWMA. Table 2.0 **(See Attachment A)** summarizes the in-kind donations that will be made as part of this grant proposal (not counting expenses included as in-kind line items in the budget).

## Project #1: Knotweed Eradication within and Adjacent to the Lower Yurok Reservation- $25,955

**Project Goal:**
To eradicate patches of knotweed (*Polygonum spp.)* within the Lower Yurok Reservation to support similar labors by adjacent public and private landowners in an effort to eradicate the species from Humboldt and Del Norte Counties.

Knotweed (*Polygonum spp.*) is an aggressive invasive perennial that can have both direct and indirect negative impacts to native plant and wildlife species. Subsequently, this plant species can impact subsistence and cultural species important to the Yurok way of life. Moreover, knotweed infestations along riparian zones can increase the potential for flooding in wildlife habitat, home sites, and cultural areas in or near the floodplain, as well as potentially block fish passage. Thus, the Yurok Tribal Council is extremely interested in eradicating this plant species both within the Reservation and within all of Yurok Ancestral lands (see Map 1).

**What are the Project's Long-Term Benefits and/or Region-wide Significance:**
Knotweed spreads very rapidly particularly along riparian zones and right-of-ways (ROW). Only a ½" piece of the plant can move downstream and colonize a new area. Additionally, cutting, mowing, and/or pulling the plant actually increases the rate of growth from the rhizome, which may extend as far as 30 feet from the host plant. Thus, present patches can increase their size each year extremely rapidly and new locations can be colonized easily. Currently, there are reported infestations along Hunter, Hoppaw, and Salt Creeks, which all flow into the Lower Klamath River. It is not known, however the extent, size, or locations of all patches, or is it known whether the species has colonies along the Klamath River. Although reports indicate that all known patches are still at a manageable size (< 250 canes).

Other members of the Humboldt-Del Norte Weed Management Area (HDNWMA) have been working within their jurisdictions to eradicate knotweed from Humboldt and Del Norte Counties (see Map 3). The Yurok Reservation lies within both counties, but no efforts or coordination has been made previously with the Tribe to eradicate the species from

Reservation lands. Thus, knotweed has the potential to continue spreading throughout the Lower Reservation and onto adjacent public and private lands, primarily including those lands managed by member agencies of the HDNWMA. Thus, it is imperative to eradicate this species from lands within the Yurok Reservation in order to aid in removing it from lands within Humboldt and Del Norte Counties, as well as eradicate it before it grows and spreads to an unmanageable extent.

'The Yurok Tribe is a new member of the HDNWMA. Historically the Yurok Tribe has been overtly opposed to the use of pesticides both within the Reservation and all of Ancestral Lands and has a Resolution (96-23) to this effect. Although this remains the position of the Tribal Council, there is a developing understanding that in dealing with an invasive such as knotweed, where manual removal will only expedite the growth and spread of the plant, a judicious and responsible IPM approach may be the only possible means to eradication. Coupling this understanding with a responsible and controlled method of application, a herbicide that research shows should have no likely impact to the health and welfare of the Tribe or members, and water and soil sampling to ensure no translocation, the Tribal Council has agreed to the use of an IPM approach to eradicate knotweed under this proposal. Thus, funding and implementation of this single project, could assist County, State, and Federal public agencies in opening dialogue with the Tribe on judicious and responsible implementation of an IPM approach in certain instances when all other means have either been exhausted or are in all likelihood futile.

**Priority Topic Area(s) Being Addressed:**

This project proposal primarily falls under #3 Regional Collaborations, but also addresses priority #1 Eradication. Moreover, surveying may determine that the project also lies under priority topic area #4 High Value Sites if it is found to be colonizing cultural sites, such as villages and gathering areas. This is a "B" rated invasive by the California Department of Food and Agriculture. Likewise, the California Invasive Plant Council recognize this invasive as a "Red Alert" species.

**Project Objectives and Methods:**

**Objective 1:** Eradication of all possible patches is the primary goal of this proposal. Thus, a responsible Integrated Pest Management approach will be introduced.

**Task 1 – Application:** The Project Crew will perform herbicide applications to all possible knotweed colonies per the development eradication plan. Application will include the use of AquaMaster™ by way of the JK100 Injector. Patches adjacent to the Reservation or within Del Norte County ROW, will be injected by a seasonal staff member from the Del Norte County Agricultural Commission's Office in partnership with the Yurok Tribe's Project Crew.

**Task 2 –** Monitoring **and Sampling:** All injected patches will be monitored one and two weeks after application and additional injections will be made as necessary. Monthly monitoring, including photo and statistical documentation will continue until the first frost when the plant dies back naturally. Water and soil sampling will also be performed by staff of the Environmental Program and will be analyzed by North Coast Labs in Arcata, CA. Sampling is a key component to ensure that the herbicide has not transported.

**Task 3 – Results Reported:** Results recording the success of the project, including photos and graphs will be provided to members of the HDNWMA and the Yurok Tribal Council. Additionally, water and soil sampling results will be provided to the Tribal Council to ensure that the health and welfare of members are protected.

**Objective 2:** Knotweed detection will be conducted on lands within and adjacent to the Lower Yurok Reservation. The Yurok Tribe, including the Environmental and Watersheds Programs will lead this project. The Project Coordinator will train and supervise the Project Crew in identification and documentation.

**Task 1 – Survey:** The Project Crew, plus two AmeriCorps Volunteers will survey and document known ROW locations and roadsides. Creek riparian zones along lower Hunter, Hoppaw, and Salt Creeks will be pedestrian surveyed, commencing 200 yards above the most upstream reported location. Additionally, a river survey will be conducted via boat, beginning ½ mile upstream of Hoppaw Creek (most upstream of the three creeks).

**Task 2 - Documentation:** All patches will be photographed, documented, cataloged, and the GPS coordinates will be taken. From this documentation, a GIS layer will be created in order to spatially analyze the locations related to size and location of the patch, landownership, Reservation status, and access, in order to devise the most suitable and efficient methodology for eradication. GIS information will be provided to the members of the HDNWMA.

**Objective 3:** Outreach will be performed with Del Norte County, Yurok Tribal Staff, private landowners within the Reservation, and nurseries within Del Norte County to educate them on the potential of this invasive so they may modify behavior, as well as inform the project.

**Task 1 – Del Norte County:** Del Norte County maintains several of the roads inhabited with knotweed, including Hunter Creek and Requa Roads. Currently the Roads Division is mowing the knotweed along their ROW, which as previously noted, dramatically increases the potential for the plant to spread. It is critical to inform them of the impact their actions may have and get them to stop this method of roadside vegetation management. The Tribe will also be working closely with Del Norte County Agriculture Commission staff to eradicate knotweed from lands adjacent to the Reservation to ensure those upstream patches don't continue to move downstream, thus diminishing the work proposed here.

**Task 2 – Yurok Tribal Staff:** Educating Tribal staff to identify knotweed will also be conducted so that field employees, such as Watersheds, Environmental, Fisheries, and Forestry Programs may inform the project regarding known locations when they spot them while conducting their usual work in the field.

**Task 3 – Private Landowners:** For those patches that are within the Reservation, but located on private fee land, outreach will have to be performed in order to either get access to treat these sites or educate the landowner on the best means to treat the locations themselves.

**Task 4 – Del Norte Nurseries:** Since knotweed is an ornamental plant, it may be sold in local nurseries. Thus, it will be necessary to contact nurseries in Del Norte County to see if they are selling the plant and if so, encourage they cease.

## Project #2: Dalmatian Toadflax Removal on Redwood National and State Parks Land-$12,672

**Project Goal:**
To eradicate an incipient infestation of Dalmatian toadflax, a CDFA "A-rated" weed, at Gold Bluffs Beach in Redwood National and State Parks, Humboldt County and to prevent its spread into adjacent private, county, state and Federal lands. Control efforts are critical to prevent this invasive noxious weed from spreading beyond the Klamath River corridor in Humboldt County.

**What are the project's long-term benefits and/or region-wide significance?**
Gold Bluffs Beach in Prairie Creek Redwoods State Park is a popular summer destination for visitors throughout the state. The potential for this invasive plant to be spread by visitors is high. Eradication of the satellite population of Dalmatian toadflax at Gold Bluffs beach will eliminate this risk, preventing subsequent damage to native plant communities and the loss of productive rangeland in other areas of the county.

Dalmatian toadflax plants are highly competitive for soil moisture with winter annuals and shallow rooted perennials. In natural areas infestations can form large colonies, displacing desirable vegetation. Livestock avoid grazing toadflax, reducing carrying capacity in areas of heavy infestation. Dalmatian toadflax grows best in disturbed areas of cool semi-arid climates and dry coarse soils. The beach and dunes at Gold Bluffs Beach provide ideal growing conditions for Dalmatian toadflax. Dalmatian toadflax represents a threat to native, disturbance-dependent dune vegetation, including the rare dune annual, pink sand verbena (*Abronia umbellata* ssp. *breviflora*, CNPS 1B.1).

**Priority Topic Area Being Addressed:**
This project addresses priority area #1, the eventual complete eradication of a small, (.5 acre), pioneer infestation of an "A-rated" noxious weed in a high value site.

**Project Objectives and Methods – list milestones and performance measures:**
**Objective:** Dalmatian toadflax detection and eradication will be conducted on Redwood National and State Park (RNSP) land. Redwood National Park (RNP) will lead this project. The RNP Plant Ecologist will train and supervise a seasonal crew in Dalmatian toadflax detection and control. The 3-staff crew will then survey, map by GPS and hand treat known infested sites. Surveys will be also conducted outside the detection site. This will include beach and dune area on RNSP land between the Klamath River and Mussel Point.

**Task 1:** The staff will **survey** previous infestation sites for Dalmatian toadflax. Survey will continue outside the original infestation to determine the possible spread of Dalmatian toadflax.

**Task 2:** The RNP staff will **treat** all known infestations and new detections of Dalmatian toadflax on RNSP land within the project area.
**Task 3:** A computerized GIS map of the project site will be created with the location of detected Dalmatian toadflax plants/populations and treatment sites. There will also be a record of previously detected locations that have been treated and considered controlled.

**Performance measures:** We will follow CDFA's weed monitoring protocol, measuring the cover of weeds or counting individual plants when feasible.