



Bay Area Early Detection Network

2010-2011 Report

THE BAY AREA EARLY DETECTION NETWORK

The Bay Area Early Detection Network (BAEDN) coordinates Early Detection and Rapid Response to plant invasions across the nine counties of the San Francisco Bay Area. Hundreds of individuals, agencies, and organizations are working together to build a BAEDN that protects our beautiful Bay Area.

BAEDN partners work together to develop a scientifically rigorous list of the most harmful invasive plants and train each other in detection techniques. They detect and report them to the shared database, then prioritize individual patches so that the most dangerous outbreaks can be removed before they spread and cause harm. We work together to remove the easiest and most harmful infestations first, while removal is still cost effective and before ecosystems are harmed.

With strategic goals and transparent objectives that can be communicated clearly, with coordination and communication among neighbors and across disciplines, BAEDN is an example of the change we must make to succeed in our conservation commitment.

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Santa Clara County Department of Agriculture

Staff

Mike Perlmutter
BAEDN Coordinator

Aviva Rossi
BAEDN Coordinator (on extended leave)

Thank you funders

Your generosity and vision have supported BAEDN to obtain data, assess threats, and prioritize occurrences for action. BAEDN staff have coordinated partners to voluntarily treat prioritized infestations, leveraging tremendous in-kind matches from dozens of partners. Most importantly, BAEDN has passed funding directly to partners to ensure that eradication action takes place even when willing partners lack the resources required.

- ♥ American Recovery and Reinvestment Act
- ♥ California Department of Food & Agriculture
- ♥ National Fish and Wildlife Foundation
- ♥ San Francisco Bay Joint Venture
- ♥ U.S. Fish & Wildlife Service, San Francisco Bay Coastal Program
- ♥ U.S. Forest Service



Thank you fiscal sponsor

The California Association of Resource Conservation Districts (CARCD) acts as BAEDN's fiscal sponsor. CARCD has unique experience supporting a diversity of organizations, and provides valuable experience in conservation efforts throughout California. We love CARCD!



For information or to get involved, please contact:

Coordinator@BAEDN.org
888-427-4447
<http://BAEDN.org>

ACCOMPLISHMENTS 2010-2011

This is BAEDN's third biennial report, summarizing the remarkable progress that the partnership made over the last two years. This report also presents BAEDN's goals for the next two years. It is an ambitious set of targets, but no more so than the goals set forth in the last biennial report.

Our 2008-2009 Biennial Report told the story of BAEDN's very early formation. A group of land managers and scientists banded together to build a new kind of partnership. The goals set forth in that report were daunting. BAEDN partners and staff were to complete a nine-county rapid response field season that included: publishing the eradication target species list, using new science to prioritize occurrences for treatment, identifying rapid response partners, developing contracts, and funding work to remove the highest priority occurrences. We also committed to build technical and organizational infrastructure to support this work, by: obtaining funds to support early detection and rapid response (EDRR) in wetlands, expanding the database by adding capability to upload shapefiles and display polygons, and developing smartphone apps for field mapping of plant occurrences. Finally, we pledged to expand the benefit beyond the Bay Area by making BAEDN tools and lessons available to other groups and individuals, conducting workshops to train professionals statewide, and supporting the development of systematic and transparent EDRR networks across California.

As summarized in the report you are holding, most of these goals have been accomplished. BAEDN partners have finished two years of rapid response, built a shared system that is now an important part of Bay Area conservation, and contributed to the emergence of similar efforts across California.

Congratulations!

A Growing Partnership

On March 4 2010, BAEDN hosted a full day partner meeting attended by over 130 conservationists from 80 organizations throughout the nine-county region. This event actively engaged experts in topical working and advisory groups, and partners helped to make important decisions required for the subsequent field season.

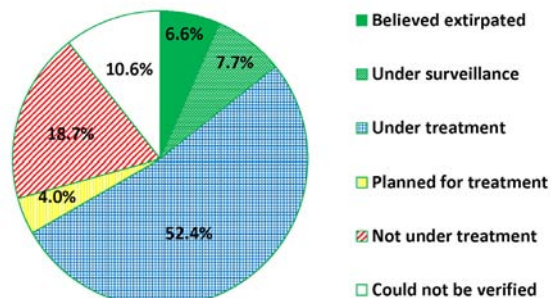
These groups were the genesis of committees that helped to guide important decisions over the last two years. Special thanks go to the dedicated partners who contributed extra time to ensure success of the Priority Weed List Group and the Rapid Response Group.



"March Forth" 2010 BAEDN Partners meeting. Photo by Bob Case.

On the Ground—Rapid Response

BAEDN completed successful field seasons in 2010 and 2011. In 2010, staff developed the target species list, made maps of 800 records of target species, and used WHIPPET (Weed Heuristics: the Invasive Population Prioritization for Eradication Tool) to prioritize those infestations for eradication. They then contacted partners to verify the presence of prioritized infestations and encourage voluntary treatment. At the end of 2010, more than half of all occurrences were under treatment by partners. In 2011, staff continued to coordinate treatment by partners and provided financial support to partners and contractors to treat the remaining priority infestations. To date more than two thirds of BAEDN's priority populations have been treated, and many have even received follow-up treatment.



Identifying Tomorrow's Problem Species Today—the Bay Area Early Detection Species List

In 2010, BAEDN published the first Early Detection Plant Species List for the San Francisco Bay Area. This list identified 73 invasive species that are now sparsely distributed in the Bay Area but are likely to cause harm if allowed to expand. These priority species were selected from over 1400 potential species that were screened using geographic distribution and abundance analysis, scientific weed risk assessment, and expert opinion. This "least wanted" list provides early detection targets and eradication priorities for land managers throughout the region. A revised list will be published in 2012 which will also include county-specific recommendations and guidance for containment and watch list species. The list will be available online at <http://BAEDN.org>.

ACCOMPLISHMENTS 2010-2011

Early Detection and Rapid Response

BAEDN partners recently removed the first North American wildland infestations of large-leaved St. John's wort (*Hypericum grandifolium*). The first outbreak was identified by Jolie Egert, verifying a report made to Calflora by Cassandra Liu.



Jolie collected voucher specimens that were sent to CDFA and identified by botanists Fred Hrusa and Dean Kelch.

The new invader is related to Canary Island St. John's wort (*H. canariense*), a BAEDN priority species and a B-rated noxious weed. BAEDN outreach to partners about this high priority detection led to a subsequent detection by "Eagle Eye" Eric Wrubel of the National Park Service. BAEDN coordinated with private landowners and Caltrans to remove both occurrences. Due to its high potential to cause harm, large leaved St. John's wort was evaluated and quickly assigned a "Q" noxious weed rating by CDFA. BAEDN partners will continue to detect and remove any outbreaks of this unexpected new pest.



Top: Large leaved St. John's wort. Photo by Jolie Egert.
Bottom: Andre Gauthier of BAELIN Inc. removing large leaved St. John's wort. Photo by Mike Perlmutter.

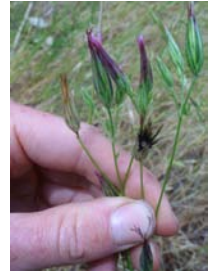
Preventing Spread

BAEDN priority sites often occur in hard-to-reach places or unexpected locations. Sometimes we protect beautiful open spaces by working in adjacent disturbed sites, treating threats on degraded roadsides, rails, rivers, and ridges so that they do not spread into biodiverse lands.

For example, BAEDN and partners work on priority occurrences along Caltrans right-of-ways, at the base of PG&E towers, and alongside railroad tracks. Caltrans staff Chad Klein, Shawn Casteel, and Ray Kwan have enthusiastically assisted with securing permits that allow treatment on Caltrans right-of-way. In 2011 BAEDN partnered with Amtrak, Reforestation Services Inc., and John Beall of the San Mateo County Department of Agriculture to treat infestations of invasive skeletonweed (*Chondrilla juncea*) along railroad tracks from San Francisco to Santa Clara County.

Working Across Boundaries

Staff at Annadel State Park in Sonoma County have worked for years to eradicate common crupina (*Crupina vulgaris*). BAEDN assisted by providing funding and coordination for removal on adjacent private lands, so that restored State Park lands are not reinvaded by *Crupina* from untreated neighboring parcels.



Top: *Crupina* flowers and fruit. Bottom: Common crupina infestation boundary. Photos by Mike Perlmutter.



Shelterbelt Builders Inc. uses specialized transport to access BAEDN partner USFWS lands at San Pablo Bay National Wildlife Refuge. Photo by Mark Heath.

ACCOMPLISHMENTS 2010-2011

Partner Focus: Teamwork

Working together we can make a difference. The core philosophy of the BAEDN partnership is that we pool our information to make the best decisions, and then pool our resources to make sure the work gets done.

For example, fertile Capeweed (*Arctotheca calendula*) is an A-rated weed with only three known Bay Area occurrences—the latest recently discovered by Robert Steers of the National Park Service. Fertile Capeweed invades valuable pastureland and eradicating this infestation has been a high priority for Point Reyes National Seashore. In the last two years an expanding roster of partners has pitched in to help Ellen Hamingson and other National Park Service staff. BAEDN, CDFA biologists, Gold Ridge Resource Conservation District, and the Marin-Sonoma Weed Management Area have provided funding, equipment, off road vehicles, and elbow grease to help with eradication efforts.



Top: fertile Capeweed flower. Photo by NPS. Left: licorice plant (grey patches) invading Mt. Tamalpais. Photo by Dan Gluesenkamp. Mike Perlmutter with licorice plant. Photo by Shane Morgan.

Licorice plant (*Helichrysum petiolare*) has been planted in landscaping throughout California, where it is generally non-invasive. However, on Mount Tamalpais it is spreading like wildfire over vital wild habitat. For several years Bree Hardcastle of California State Parks and Maria Alvarez of the National Park Service have worked diligently to contain the infestation and prevent spread. Recently their dedicated efforts to eradicate occurrences of this plant have been supplemented by contractors funded by BAEDN and the Marin-Sonoma Weed Management Area. Preventing further spread of this unusually invasive genotype is a statewide priority, and the neighborhood is pitching in.



Dense stands of Canary Island St. John's wort (yellow blooms) along the San Mateo coast exclude native species. Photo by Neal Kramer.

Canary Island St. John's wort (*Hypericum canariense*) easily grows to 10 feet tall in dense single species stands. The plant is highly invasive elsewhere, but California has just a few occurrences along the coast from San Diego to Marin. Most of the populations are small and BAEDN has worked with California State Parks and Audubon Canyon Ranch to eradicate the species from their lands. By far the largest infestation is on the San Mateo coast near Año Nuevo State Park, where a large stretch of high quality coastal scrub habitat has been invaded. Peninsula Open Space Trust (POST), California State Parks, and San Mateo Resource Conservation District worked to control and contain this "mothership" population, with additional support contributed by BAEDN, San Mateo Weed Management Area and Agricultural Commissioner, CDFA, a private landowner, and John Klochak's USFWS San Francisco Bay Coastal Program. Jeff Powers of POST even petitioned California Department of Food and Agriculture to list the plant as a noxious weed, successfully giving the county and landowners important tools to ensure effective response.

ACCOMPLISHMENTS 2010-2011



Protecting Wetlands and Wildlife

BAEDN partners are working to protect sensitive San Francisco Bay tidal wetlands from new plant invasions. BAEDN outreach has sparked new detection and removal of Algerian sea lavender (*Limonium ramosissimum*), a destructive invader of Central and Southern California wetlands that was recently detected in San Francisco Bay wetlands. While a pretty plant, Algerian sea lavender excludes species such as gumplant (*Grindelia stricta*) and degrades habitat for endangered California clapper rail, salt marsh harvest mouse, and other sensitive marsh wildlife.

BAEDN and partners have conducted initial removal at many of the known sites around San Francisco Bay. Staff and volunteers joined contractors hired with funding assistance from the San Francisco Bay Joint Venture (SFBJV). Recognizing the importance of this project, SFBJV and the California Coastal Conservancy recently joined with BAEDN to request funding from the U.S. Fish and Wildlife Service to extend eradication work to all invaded sites, and bring stakeholders together to ensure continued protection of these coastal wetlands.



Photos: California clapper rail. Photo by Joyce Gross. Renee Tai, a volunteer for Friends of 5 Creeks, pulls Algerian sea lavender from the Albany shoreline. Photo by Mike Perlmutter. Kathy Boyer's San Francisco State restoration ecology class volunteers remove European sea lavender from the Strawberry Shoreline. Photo by Charles Birkner. Above, Algerian sea lavender pulls out easily, unlike native *Limonium californicum*. Left, Algerian sea lavender (purple flowers) invades San Francisco Bay wetland and displaces native gumplant (*Grindelia stricta*, yellow flowers), a high water refuge habitat for marsh wildlife. Photos of *Limonium* by Mike Perlmutter.

ACCOMPLISHMENTS 2010-2011

Expanding Invasive Plant Occurrence Data

Plant occurrence data is a critical component of EDRR assessment and prioritization. BAEDN has established data-sharing protocols that allow use of data from the California Consortium of Herbaria (CCH) and is establishing a data sharing agreement with the California Department of Food and Agriculture (CDFA).

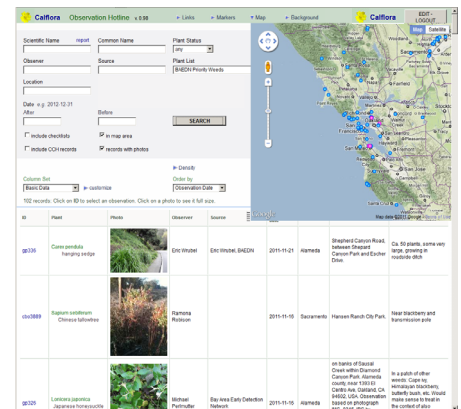
We have also partnered with Calflora and the California Invasive Plant Council (Cal-IPC) to collect and track invasive plant occurrence data. Over the last two years Cal-IPC has added more than 100,000 records to Calflora, bringing the total to more than 200,000 invasive occurrence records. Records can be entered through a variety of means, including easy web-based reporting, database uploads, smartphone reporting apps, and geo-tagged photo upload tools. Recently Cal-IPC funded a shapefile upload tool that allows you to upload your GIS to Calflora, enabling you to view the polygons and lines in Calflora or export them for viewing in Google Earth. Please contribute your data today!

BAEDN and Calflora

In 2008, BAEDN began building core infrastructure for the early detection network. Rather than build a new database we decided to use the most comprehensive existing system, and contracted Calflora for our database. We worked together to develop advanced tools for mapping and monitoring invasive plants and are now working with Calflora to further improve the system. These improvements give users robust privacy and flexible record sharing tools, enabling them to make records completely private, shared selectively with individuals or groups, or published for public access. We are also asking Calflora to expand the database to allow for tracking assessments and treatments; this work is being done in collaboration with Deanne DiPietro of the Sonoma Ecology Center.

Following BAEDN's early investment in Calflora, others began to use Calflora to integrate and share plant location information. BAEDN partners also contributed to further development: Audubon Canyon Ranch funded the MyObservations tool, and others supported professional-grade smartphone apps for plant mapping. Cal-IPC invested in tools to upload shapefiles and view polygons, and built CalWeedMapper. In the works are tools to let users create Groups and overlay citizen scientist data feeds (thanks to Morro Bay National Estuary Program); WHIPPET occurrence prioritization for Calflora occurrences (thanks to USFS and USFWS); and GeoWeed in the Cloud (thanks to NPS).

As the toolbox grows BAEDN users are able to use all of Calflora's tools for free, thanks to an institutional license for a limited number of BAEDN partners. Register for a professional account and enter the license code *BAEDN-3*.



Advancing Mobile Mapping

BAEDN partners contracted with Calflora to develop plant mapping apps for iPhone and Android devices. The user-friendly system makes mapping, photographing, and reporting plant occurrences quick, easy, and accurate. There are several "citizen science" apps, and Calflora adapted code from *What's Invasive* to create *Calflora Observer*, a pro-tool for use by land managers and scientists. *Observer* synchronizes wirelessly with Calflora, includes flexible plant list systems, and lets you collect field data in addition to location and photos. Unlike other mapping apps, *Observer* works without a phone signal or even a phone plan, and so can easily be adopted by agencies and other professionals.

The *Calflora Observer* phone apps are part of an integrated plant mapping platform that offers a user-friendly and affordable alternative to cumbersome and expensive GPS hardware and software. It's perfect for seasonals or others who do not need to use ESRI products every day. By removing logistical obstacles and streamlining data collection and management, this system helps citizens and professionals to quickly, accurately, and efficiently collect and manage plant occurrence data. The phone app was supported by the Carol and Dennis Rockey Fund, Friends of the San Pablo Bay National Wildlife Refuge, Marin Audubon, Pacific Coast Science and Learning Center, and The Bay Institute. Information is at <http://Calflora.org/phone>.

The geo-tagged photo upload tool is another great way to quickly map plants and BAEDN has loaned GPS cameras to partners for mapping BAEDN target species. Simply take a photo of the plant with your GPS camera or phone and then upload it to Calflora to generate a record automatically populated with location, date, a picture of the plant, and your name as the observer.



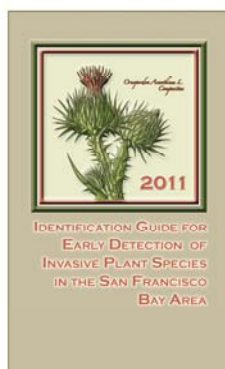
Jolie Egert of Go Wild Consulting maps treasure flower (*Gazania linearis*). Photo by Mike Perlmutter.

ACCOMPLISHMENTS 2010-2011

Trainings and Outreach

BAEDN partnered with Cal-IPC to offer a series of trainings on standardized detection and reporting protocols, and delivered three workshops in 2011. BAEDN also promoted "Weed Watcher" volunteer monitoring programs that provide standard templates for volunteer training, data collection, and reporting for priority invasive plant detection. Several partners around the region have adapted the program to their lands, training volunteers to contribute to resource management and conservation activities.

BAEDN partners, staff, and steering committee members have presented to numerous stakeholders, reaching individual partners, groups such as Weed Management Areas and the San Francisco Bay Joint Venture, wetland partners at the State of the Estuary, and statewide audiences at events such as annual symposia of the California Invasive Plant Council, the California Association of Resource Conservation Districts, and the California Agricultural Commissioners and Sealers Association. This communication effort has brought new partners and new perspectives into the shared effort.



Top: Dean Kelch and Andrew Doran train botanical vouchering to attendees of a Cal-IPC workshop on BAEDN tools.

Middle: Field guide to BAEDN target species, developed by Alicia Yballa and San Francisco State students working with Presidio Trust's Mark Frey.

Bottom: Dan Gluesenkamp training partners to use the Calflora Observer plant mapping phone app. Photos by Mike Perlmutter.

Statewide: A Network of Networks

BAEDN has continued to talk with resource managers in other parts of the state about setting up their own regional Early Detection Networks (EDNs), and how to work together as a statewide California EDN. Leaders are beginning to create networks in Humboldt County, Lake County, the greater Los Angeles Area, Morro Bay/Central Coast, and San Diego.

While the greatest outcome of EDNs will be organization of professionals to coordinate activities, it is vital that key infrastructure is in place when the groups are ready to begin operation. Toward this end we are completing key technical tools and delivering trainings to that ensure partners understand the tools available. Much of the technical infrastructure is now available and additional development is underway. For example, BAEDN recently joined with Cal-IPC and Calflora to request support for integrating WHIPPET into Calflora to prioritize eradication targets. One important resource is CalWeedMapper (<http://Calweedmapper.Calflora.org>), an online tool built by Cal-IPC with partners around the state to develop regional strategies. It currently focuses on 200 species in the Cal-IPC Inventory, but BAEDN and Cal-IPC are working together to include additional early detection species for BAEDN-style regional planning.

Add your name to the CaliforniaEDN.org partners email list to stay informed as the effort grows, especially if you are interested in helping coordinate in your region.

Expanding Detection

Asian kelp (*Undaria pinnatifida*) is a highly invasive seaweed native to Asia. The species invaded Southern California in 2000, and San Francisco Bay currently has the northern-most infestation; with suitable habitat north to Alaska, it is vital to stop it in the Bay.

The *Undaria* Project, led by Dr. Chela Zabin, is sponsored by the Smithsonian Environmental Research Center and UC Davis. They are coordinating volunteers removing infestations, reaching out to marinas and boaters, and supporting partners (such as The Aquarium of the Bay) that adopt responsibility for marinas. This initiative has been an inspiring model of EDRR, and so the BAEDN team was thrilled when *Undaria* leaders proposed that their good project merge into the BAEDN partnership.

Together we will secure additional funding to continue existing EDRR work. We will also coordinate with agencies to ensure the species does not spread -especially with the increased construction and boat movement associated with the upcoming America's Cup.

Please contact the BAEDN Coordinator or Chela Zabin (zabinc@si.edu) to share ideas or get involved.



Undaria and Chela Zabin.
Photo by Kristine Lesyna.

NOTABLE

Honoring California's District Biologists

As we celebrate the accomplishments of the BAEDN partnership, we are mindful of the recent loss of the California Department of Food and Agriculture's very successful noxious weed eradication program. In particular, CDFA's elimination of the six remaining District Biologist positions resulted in the untimely elimination of a highly effective EDRR program that protected California for decades.

In the spring of 2011, CDFA announced that funding had been eliminated for three critical biosecurity programs: the Weed Management Area Program, the Terrestrial Noxious Weed Program, and the Weed Biological Control Program. In the months since, we have seen those dedicated personnel transferred to other positions, retired, or moved out of California to continue practicing their trade in other states. The BAEDN partnership was meant to support the work of CDFA District Biologists and county agriculture staff, and this loss is a significant setback to strategic and sensible invasive plant management.

With these changes, county agricultural commissioners and their staff will be responsible for continuing this vital work with even fewer resources. Struggling with their own budget challenges, they will strive to maintain eradication projects that have seen decades of investment. In Sacramento we are engaged in a vigorous effort to renew California's commitment to protecting our lands from invasive plants, and there is reason to hope that upcoming changes may refocus and strengthen the system. In the meantime we all should give thanks to the individuals who spent their careers driving California's long highways, discovering and eliminating nightmare weeds. Their labors made our work easier, our economy stronger, our state more beautiful.



Early Detection Prioritized in Strategic Plans

Several recent strategic and management plans have explicitly named BAEDN's early detection and rapid response system as a key component of their natural resource management efforts. In general, these plans commit their organization to early detection and rapid response, and to working in partnership with BAEDN to protect their own properties and neighboring lands. This approach benefits the planning organization by adopting a system that is shared by partner agencies. It benefits natural resource managers within the organization by supporting their good efforts to do effective work. It benefits the whole BAEDN partnership by acknowledging the value of the tools we built and demonstrating the importance of continued support for the shared effort.

Recent plans that adopt BAEDN EDRR include:

- ♦ Bay Area Open Space Council 2011 *San Francisco Bay Area Upland Habitat Goals Project Report*
- ♦ California State Coastal Conservancy 2011 *San Francisco Bay Subtidal Habitat Goals Report*
- ♦ Marin Municipal Water District 2009 draft *Biodiversity Management Plan*
- ♦ PRBO Conservation Science 2011 *The State of the Birds, San Francisco Bay*
- ♦ San Francisco Bay Joint Venture 2011 *Monitoring & Evaluation Plan*
- ♦ U.S. Fish and Wildlife Service 2011 draft *South San Francisco Bay Weed Management Plan*



Ode to ARRA

This biennial report focuses on 2010 and 2011, the years in which the BAEDN project received vital stimulus from the American Renewal and Recovery Act (ARRA). BAEDN had early success thanks to previous grants from National Fish and Wildlife Foundation and the U.S. Fish and Wildlife Service San Francisco Bay Coastal Program. This made BAEDN eligible for stimulus funding from USDA's Forest Service (USFS) and the California Department of Food and Agriculture (CDFA).

With the funding came great responsibility, and BAEDN staff worked hard to deliver value. The ARRA projects championed by David Bakke (USFS) and Carri Piroosko (formerly at CDFA) have had a tremendous positive impact on conservation in California. Sister projects include the yellow starthistle leading edge project and Cal-IPC's statewide mapping project, two other innovative and highly strategic efforts to make things better.

In addition to advancing strategic change, the stimulus grant was a boon to partners in tough economic times. The majority of BAEDN stimulus funding was applied to support partners' efforts, in a time of budget cuts when many projects were in danger of being lost. In these cases stimulus funding was a critical buffer against program and staffing cuts, protecting partner investments and important ongoing eradication efforts.

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2012 GOALS

In the last two years Bay Area Early Detection Network partners have made significant investments. We have worked together to build a system that supports strategic prioritization and proactive action. We have shared knowledge and expertise to identify problems that can be solved together, and worked in coordination to fix those problems. We have spent money, donated time, given hope and faith. We have removed harmful invasive plants and in doing so have saved a part of the future.

Long term sustainability of our invasive plant eradication projects depends on continued commitment. Over the next two years the BAEDN partnership will continue to work on the targets we have prioritized, so that our investment is protected. We know that the beginning is the easiest part and that full and true eradication takes time and a rare degree of follow-through. To ensure that the important projects are completed we will count on BAEDN staff to track action and outcome, and to coordinate with partners to make sure that the final plant is removed.

Over the next two years BAEDN will:

- ◇ Develop 2012 target species lists to identify important new invaders. These include a list of region-wide eradication targets, as well as nine separate county-specific target species lists.
- ◇ Prioritize occurrences for removal.
- ◇ Coordinate partners to ensure continued treatment of existing project sites, and begin treatment of new sites.
- ◇ Obtain funding that can be made available to partners and contractors as necessary to complete treatment of priority sites.
- ◇ Expand work to protect coastal wetlands, including completing environmental compliance and permitting.
- ◇ In partnership with the *Undaria* Project, improve early detection and rapid response for invasive seaweeds in San Francisco Bay Area estuaries.
- ◇ Integrate the WHIPPET prioritization model into the Calflora database as an automated system, so partners can easily prioritize their occurrence portfolios.
- ◇ Train partners and professionals to use EDRR tools, including delivering workshops and focused training for RCDs and other key groups.
- ◇ Coordinate with other emerging early detection networks to build a network of early detection networks protecting California from harmful invasive plants.

What you can do

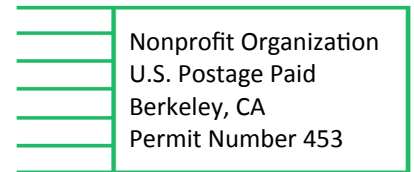
- ◇ Detect unusual or harmful plants and report them to Calflora. Take photos, collect vouchers.
- ◇ Build EDRR into your strategic plans, management plans, work plans, and performance evaluations.
- ◇ Allocate 10% of your invasive plant management work to EDRR.
- ◇ Organize, host, or teach a training. Help coworkers, colleagues, and volunteers to get involved.
- ◇ Practice prevention: pick seeds from your boots, wash tires, and apply the prevention Best Management Practices (BMPs) recently developed by Cal-IPC.
- ◇ Build a BAEDN which is truly collaborative—which you can trust, which you can own. Stay in touch by subscribing to the Partners email list.
- ◇ Keep it going! Removing that last plant is the hardest part and takes continued commitment.

PARTNERS

Acterra
 Alameda County Department of Agriculture
 Alameda/Contra Costa Weed Management Area
 Audubon California
 Audubon Canyon Ranch
 BAEIN Inc.
 Bay Area Open Space Council
 Bay Institute
 Bay Nature Magazine
 Bay-Friendly Landscaping and Gardening Regional Coalition
 Calflora
 California Association of Resource Conservation Districts
 California Department of Fish and Game
 California Department of Food and Agriculture
 California Department of Pesticide Regulation
 California Department of Transportation (Caltrans) District 4
 California Department of Water Resources
 California Invasive Plant Council
 California Native Plant Society
 California State Coastal Conservancy
 California State Parks
 Center for Research on Aquatic Bioinvasions (CRAB)
 City and County of San Francisco
 City of Albany California
 City of Richmond Parks & Landscaping Dept
 City of Walnut Creek
 Conservation Corps North Bay
 Conservation Value, Inc.
 Consortium of California Herbaria
 Contra Costa County Department of Agriculture
 Contra Costa Resource Conservation District
 County of San Mateo Parks Department
 Creekside Center for Earth Observations
 Ducks Unlimited
 East Bay Chapter of CNPS
 East Bay Regional Parks District
 Friends of 5 Creeks
 Friends of Corte Madera Creek
 Friends of Edgewood Natural Preserve
 Friends of Glen Canyon Restoration Team
 Friends of Sausal Creek
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 Golden Gate National Parks Conservancy
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 Jepson Herbarium
 Kramer Botanical
 Laguna de Santa Rosa Foundation
 Land Trust of Napa County
 Literacy for Environmental Justice
 LSA Associates
 Marin Audubon
 Marin Chapter of CNPS
 Marin County Department of Agriculture
 Marin County Flood Control & Water Conservation District
 Marin County Open Space District
 Marin Municipal Water District
 Marin/Sonoma Weed Management Area
 Midpeninsula Regional Open Space District
 Milo Baker Chapter of CNPS
 Napa Botanical Survey Services

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 Solano Land Trust
 Solano Resource Conservation District
 Solano Weed Management Area
 Sonoma County Agricultural Preservation and Open Space District
 Sonoma County Department of Agriculture
 Sonoma Ecology Center
 Sonoma Land Trust
 Stanford University
 Starr King Open Space
 Strawberry Recreation District
 Sustainable Conservation
 United States Fish & Wildlife Service
 University of California Berkeley Botanical Garden
 University of California Berkeley Herbarium
 University of California Cooperative Extension
 University of California Davis
 University of California Davis, McLaughlin Reserve
 University of California San Francisco
 University of California Santa Cruz
 University of San Francisco, Department of Environmental Science
 U.S. Forest Service
 West Coast Wildlands
 Willis Linn Jepson Chapter of CNPS
 Wood Biological Consulting
 Yerba Buena Chapter of CNPS

BAEDN Partners have generously contributed support, expertise, equipment, and cooperation to our shared initiative.
 This list is incomplete and omissions are unintentional; please contact Coordinator@BAEDN.org to be added.



THE BAY AREA EARLY DETECTION NETWORK

BAEDN is a collaborative partnership of regional land managers and invasive species experts. We coordinate Early Detection and Rapid Response to infestations of harmful invasive plants, proactively addressing new outbreaks before they grow into large and costly environmental threats. This “stitch-in-time” approach prevents the environmental and economic damage caused by these invaders. BAEDN educates citizens regarding natural resource stewardship, and dramatically reduces the need for the planning and resources required to control large established invasive plant populations.

The Bay Area Early Detection Network:

- ◇ Identifies the invasive plant species that most threaten the San Francisco Bay Area, and promotes a list of these detection targets.
- ◇ Provides a user-friendly online database that standardizes reporting and tracking of priority invasive plant species.
- ◇ Develops detection protocols and reporting guidelines; promotes recruitment and training of citizen and professional detection partners in the use of these tools.
- ◇ Prioritizes occurrences for eradication; gives eradication recommendations to responsible land managers; provides assistance to ensure eradication of prioritized occurrences.
- ◇ Provides scalable templates for adoption by other regional Early Detection Networks, and encourages establishment of coordinated networks serving every region of California.