

WEED PROGRAM GAPS - SLIDES FROM PEST MANAGEMENT

All,

For those that couldn't make it, here are the slides and a brief explanation of what I presented as critical position gaps at the Pest Management Program Team Meeting last Wednesday. This was based on the feedback I was provided in this discussion (minimal) and at the Weed Workgroup Meeting on Tuesday. I also received some email feedback from Jodie, Milt, and Chris late on Tuesday and I tried to incorporate that into my discussion at the program team meeting.

Using the attached slides, I tried to make the case that weed science extension is important throughout the state. I outlined some key areas of why weed expertise is needed in addition to the more pedestrian, every-day weed control questions from land managers etc. In the 10th slide, I talked about the number relatively few new weed positions and the drain of weed expertise – especially in the advisor ranks where a number of “agronomy” advisors really had a lot of weed science program effort. The 11th slide is a map of weed expertise in the state (I made this from people who’ve identified themselves as members of the weed workgroup). In the 12th slide, I took the liberty of bumping off those of us with large administrative appointments (no offense!) and those who are very close to retirement – I wanted to make the point that we are much shorter on weed expertise than our current numbers might suggest. At this slide, I also spoke about how a number of the remaining folks are not necessarily focused on weeds (examples of Milt, Oleg, Richard, Scott) but also do agron/hort work in their areas. Finally, I outlined the proposed positions that I sent to you (SoCal group) earlier (below) and in the 15th slide, placed them on a new map along with the “in process” positions. My goal here was to show that we’re proposing new, early career weed science expertise throughout the state to ensure that we can have some coverage, with no worry of saturation in any area.

Below is an explanation that I revised this slightly from an email I sent to Jodie and others last week as I prepared these slides.

We did discuss Weed Workgroup support of the following positions (although we didn’t necessarily fully agree on prioritization).

1. **UCD Specialist–Weed Management** in Central Valley **vegetable** and **grain cropping systems**.
This is envisioned as somewhat of the role that Tom Lanini did in veg/fruit with the addition of the agronomic crops (corn, cereals, alfalfa) grown in the cropping rotation. The big drivers behind this include: supportive commodities, lots of commodity advisors but little weed expertise (especially with retirements of half a dozen agronomy advisors who worked on weeds to some extent), and a lot of acreage and crop value in tomato, melon, wheat, corn etc. – probably a couple million acres. Also, good support of the Agronomy Workgroup and Vegetable Workgroup.
2. **Aquatic Weed Management CE Specialist** (could be UCD, UCANR, or UCR?) We discussed a complete lack of UC focus in this issue but serious needs in the state. USDA-ARS is refilling Lars Anderson’s position (John Madsen starts in a few weeks) but the new ARS model is not likely to let him do the kind of outreach that Lars did—a CE Specialist in this area could really have foot print in this arena. Not considered as high priority as the position above and so would move

down the list if it were a UCD position as we'd not be likely to get both. Also, less of a continuum in place for this currently.

3. **IPM Weed Advisor**—probably strong case both programmatically and politically to place this at Kearney. ANR is putting a lot of effort into repopulating that facility and the weed position vacated by Anil Shrestha never was refilled so this may be an opportunity to fill a slot there. Also, there will be a suite of new pest management folks there, including the UCR nematology position, so the timing is good to round out that team. Importantly, all the Advisors who work in weeds in that part of the state are likely to retire within the next five years (LeStrange, Wright, Hembree) so there will be a complete lack of weed science coverage in the southern San Joaquin Valley at that point. Some discussion as to whether this should be at Kearney or elsewhere in the San Joaquin Valley.
4. **Area Agronomy Advisor** with a **weed focus** in the Sacramento Valley. Chris Greer suggested that as multi county director and with the support of the agronomy workgroup, he could sponsor an agronomy advisor who could bring weed expertise to that part of the state. Kassim suggested that it could be an IPM Advisor or an affiliate. Most of the WWG thought this would be a good addition to cover some of the weed gaps left with recent retirements of agronomy/weed folks (Munier, Schmierer, Marcum etc.).
5. We discussed continued support of the **low desert agronomic crops weed advisor**. No one argued against it and it seems to remain a strong need. One concern was raised that Sam Wang has a weed science background and that might reduce this need?—I haven't met Sam so I don't know if that is correct (his background or reducing the critical need).
6. Finally, we discussed briefly an Advisor position something along the lines of "**Invasive and non-crop weeds Advisor** for region north of San Francisco and including the coast range. Somewhere in (Sonoma / Lake / Mendocino / Humboldt, etc.) It was viewed a bit like what Chris McDonald does but in the region with more water and cattle as well as urban corridors. There is a need to interface between weed specialists (DiTomaso) and the livestock, range, and natural resource advisors working in these regions.

My take on this was we could probably make the strongest case for #1 and #3 on this list and provide strong support for #4 as well as #5 if there is local support for it. #6 probably needs to be fleshed out but we should try to get it in the ANR queue for future consideration.

Finally, I made this point about getting some new, early career weed expertise through the state as follows (north to south):

1. Advisor Lassen Co. This has been approved by ANR but not yet advertised (this was essentially the position that Rob Wilson was in)
2. Area Agron Advisor with weed expertise in the Sacramento Valley (#4 above)
3. UCD Weed Specialist (#1 above)
4. IPM Weed Advisor in San Joaquin Valley (Kearney Ag Center) (#3 above)
5. UCR Weed Specialist (UCR current search)
6. Low Desert Agronomy/Weed Advisor

Weed Science at UC – Issue Updates and Critical Program Gaps

Brad Hanson

A series of horizontal lines in teal and white, extending from the right side of the slide towards the center, positioned below the author's name.

Weeds - costly, but under the radar?

- Weeds are the most impactful and economically damaging pest group in managed and natural ecosystems.
- 70% of all pesticides applied in the US are herbicides
 - Annual cost of \$7 billion to land managers
 - Source: recent WSSA letter to USDA-ARS NPS
 - *(this proportion is likely lower in CA due to labor and herbicide options in specialty crops)*

Emerging issues updated from 2012 Pest Management Program Team Mtg

- **Herbicide-resistant weeds**
- **Volatile organic compounds (VOCs) and other regulatory changes**
- **Organic and sustainable weed management programs**
- **Urban ag and weed management**
- **Precision ag tools**
- **Prevention programs**
- **Aquatic weeds**

Herbicide-Resistant Weeds

- Serious problem of rice for ~20 yrs
- Becoming an important concern in other cropping systems
 - Glyphosate resistance (5 species confirmed, other under investigation)
 - Concerns about multiple-resistance and non-target site resistance
 - Tolerance to other non-herbicidal stresses?

VOC / Air Quality Issues

- EC formulations of herbicides and other pesticides contribute to VOC emissions
 - Combine with nitrous oxides to form smog
- Some pesticides have low-VOC alternatives – others have more complicated solutions
- Issue at the intersection of agriculture/ environment/ public health/ food safety concerns

Organic and Sustainable Programs and Urban Ag

- **Urban population becoming more involved in producing food gardens**
 - **Over application of pesticides, including herbicides**
- **Increasing interest in less chemically-intensive farming systems**
 - **Weed control is a major limitation in these areas**

Precision Agriculture

- Future will require optimization of herbicide use
- Precision ag also allows for minimizing environmental impacts
- May prove to be more economically sustainable
- May be time to reinvest in non-chemical weed control research (machine-vision cultivators?)
 - Economic driving force in specialty crops
 - Labor availability, food safety, consumer desires

Prevention Programs

- **Investments in preventing new pest introductions has greater than 25:1 cost benefit ratio**
- **With increase in human mobility, trade, and globalization, prevention strategies are more important now and in the future than ever before**

Aquatic Weeds

- Increase in projected population of California will put even greater demand on water resources and quality
 - Agricultural requirements for water
 - Urban requirements for water
 - Environmental requirements for water
- Aquatic weeds can severely impact the quality and availability of all three elements
- *USDA-ARS recently refilled Lars Anderson's position at Davis (John Madsen) – still little expertise in UC system*

Weed science positions and significant program changes made in recent yrs

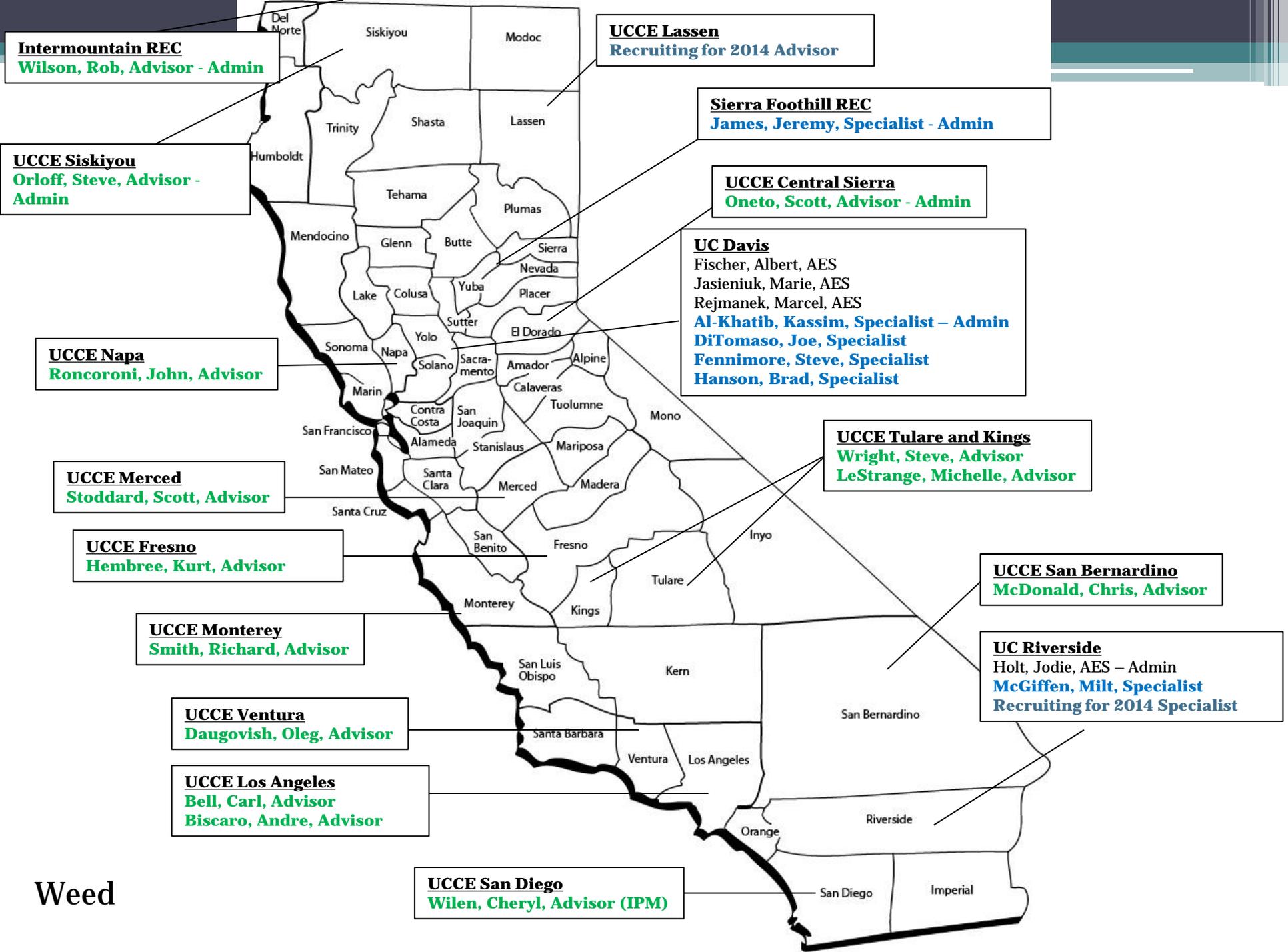
Gains

- Lassen Advisor – search approved
- UCR Specialist – search ongoing (2nd round)
- UC ANR Specialist – hired James 2012 (REC director)
- UCD Specialist – hired Hanson 2009
- UCD Specialist – hired Al-Khatib 2009 (IPM director)

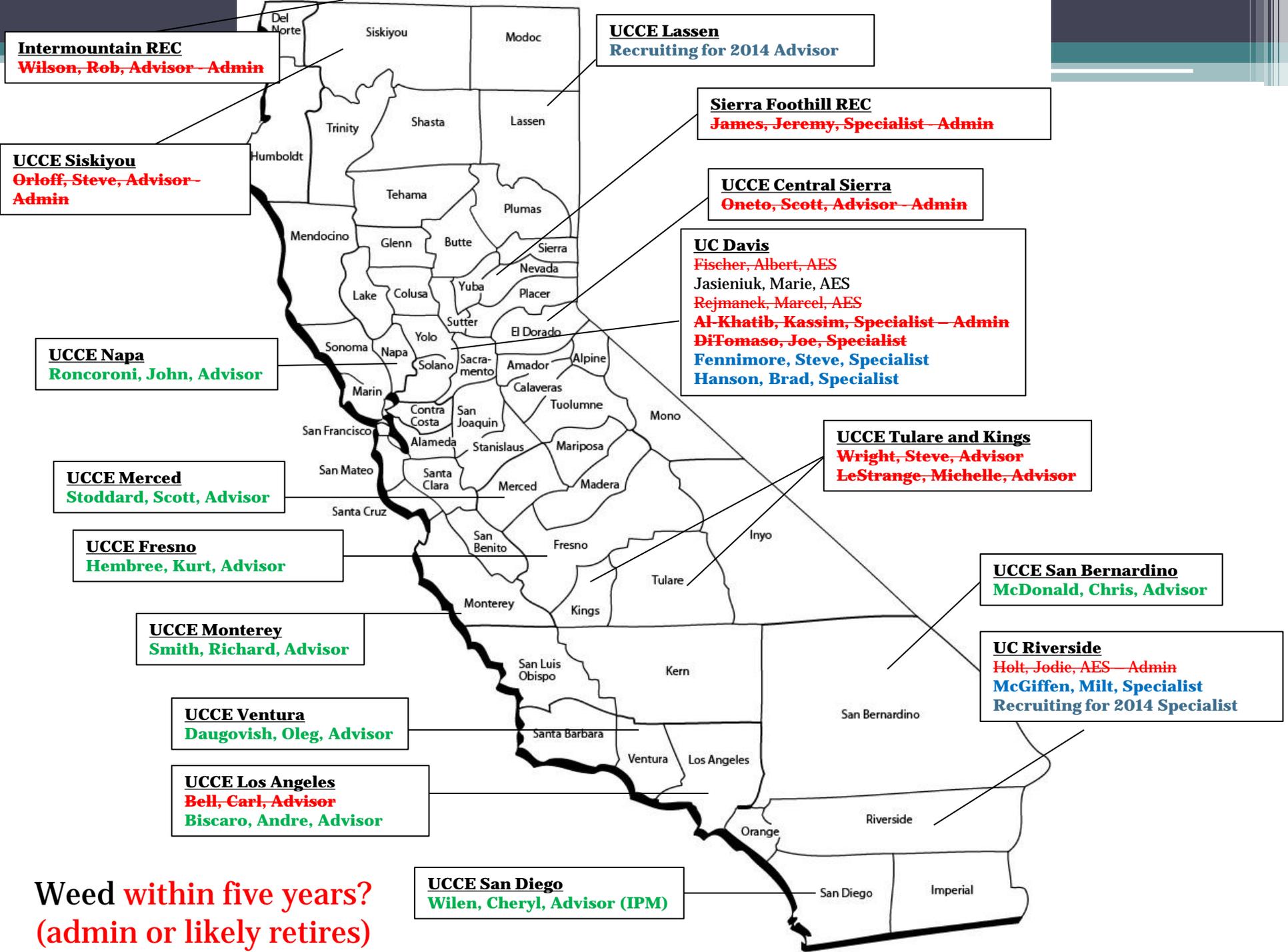
Losses

- Specialist – Lanini 2013
- Advisor – Munier 2012
- Advisor – Canaveri 2011
- Advisor – Marcum 2011
- Advisor – Schmeirer 2010

- Other positions lost or vacant:
 - AES – Norris 2008
 - AES – Bayer – 2007
 - IPM Adv. – Shrestha 2007



Weed



Intermountain REC
Wilson, Rob, Advisor-Admin

UCCE Lassen
Recruiting for 2014 Advisor

Sierra Foothill REC
James, Jeremy, Specialist-Admin

UCCE Siskiyou
Orloff, Steve, Advisor-Admin

UCCE Central Sierra
Oneto, Scott, Advisor-Admin

UC Davis
Fischer, Albert, AES
Jasieniuk, Marie, AES
Rejmanek, Mareel, AES
Al-Khatib, Kassim, Specialist-Admin
DiTomaso, Joe, Specialist
Fennimore, Steve, Specialist
Hanson, Brad, Specialist

UCCE Napa
Roncoroni, John, Advisor

UCCE Merced
Stoddard, Scott, Advisor

UCCE Tulare and Kings
Wright, Steve, Advisor
LeStrange, Michelle, Advisor

UCCE Fresno
Hembree, Kurt, Advisor

UCCE San Bernardino
McDonald, Chris, Advisor

UCCE Monterey
Smith, Richard, Advisor

UC Riverside
Holt, Jodie, AES-Admin
McGiffen, Milt, Specialist
Recruiting for 2014 Specialist

UCCE Ventura
Daugovich, Oleg, Advisor

UCCE Los Angeles
Bell, Carl, Advisor
Biscaro, Andre, Advisor

UCCE San Diego
Wilén, Cheryl, Advisor (IPM)

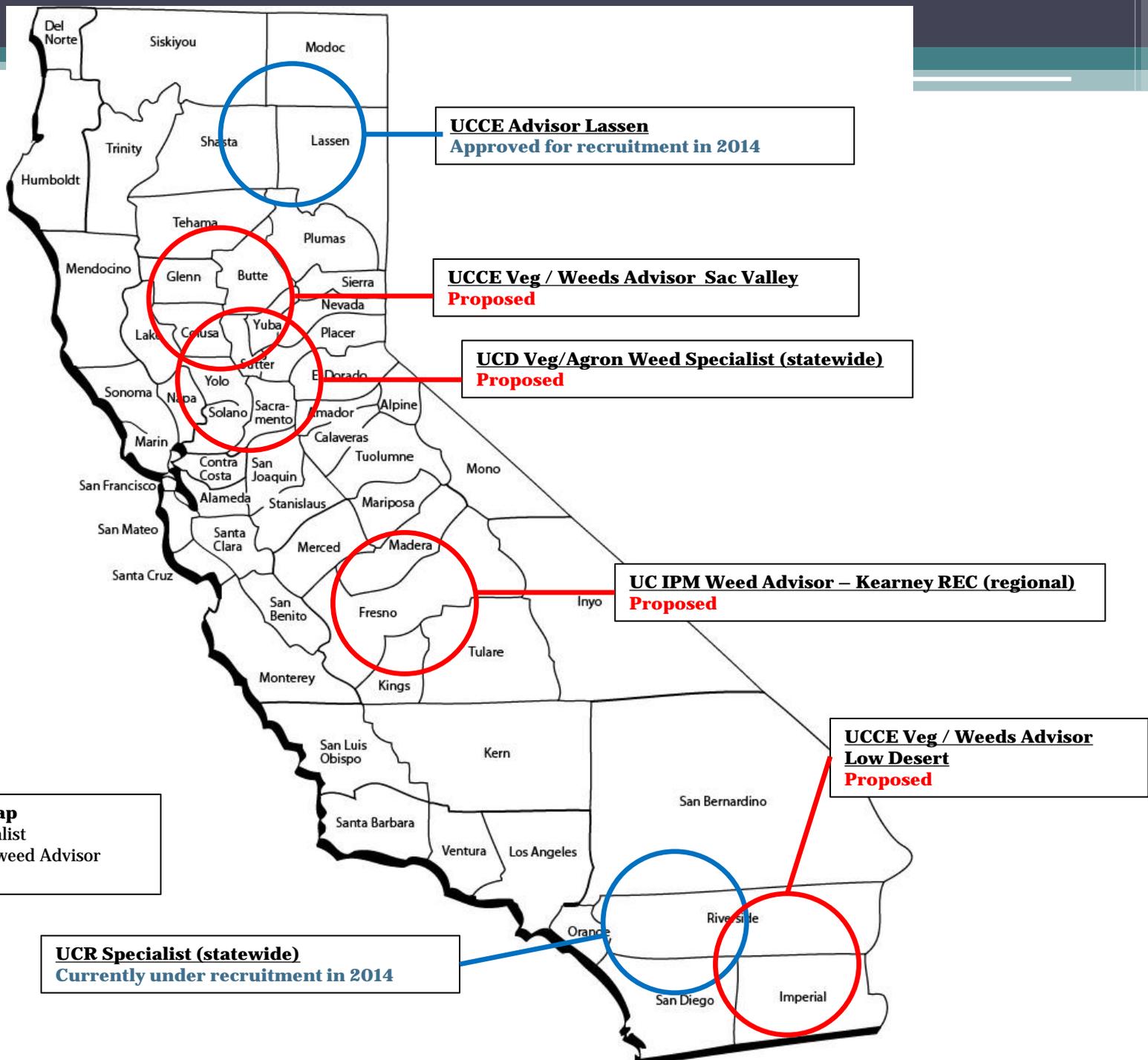
Weed within five years?
(admin or likely retires)

Recent (yesterday!) WWG position priorities - CE Specialists

- UC Davis – Weed management in annual fruit, vegetable, and agronomic cropping systems of the Central Valley
- UC (?) – Aquatic Weed Specialist

Recent (yesterday!) WWG position priorities - CE Advisors

- **UC IPM Weed Advisor – Kearney Research and Extension Center**
- **Area Agronomy Advisor - Sac Valley - Agronomist with weed science expertise**
- **Low Desert Vegetable Crop Advisor – Imperial? – with weed science expertise**
- **Invasive Weed and Non-Crop Weed Advisor – Delta corridor and Sierra foothills**



UCCE Advisor Lassen
 Approved for recruitment in 2014

UCCE Veg / Weeds Advisor Sac Valley
 Proposed

UCD Veg/Agron Weed Specialist (statewide)
 Proposed

UC IPM Weed Advisor – Kearney REC (regional)
 Proposed

UCCE Veg / Weeds Advisor Low Desert
 Proposed

UCR Specialist (statewide)
 Currently under recruitment in 2014

Proposed but not on map
 UC(?) Aquatic Weed Specialist
 Invasive weeds/non-crop weed Advisor
 Delta and foothills

