

Prescribed Burning on Private Lands, the Consultants Role



**PRESCRIBED FIRE
NEEDS YOU**

What is Prescribed Fire ?

- Prescribed fire is a **SAFE** way to apply a natural process, ensure ecosystem health and reduce wildfire risk.
- Controlled application of fire to existing vegetative fuels under specific environmental conditions and following appropriate precautionary measures which causes the fire to be confined to a predetermined area and accomplishes one or more planned land management objectives or mitigates catastrophic wildfires (legal definition AL & GA)



Resource Objectives RXB

- Premarking
- Control of undesirable species (CUS)
- Timber stand improvement (TSI)
- Site preparation (natural & artificial regn)
- Hazard fuel reduction
- TES habitat improvement

Resource Objectives (cont)

- Wildlife habitat improvement (quail, deer, turkey)
- Insect & disease control (brownspot, annosus root rot)
- Disposal of logging debris (piles, windrows)
- Range improvement
- Esthetics
- Ecosystem restoration

Types of Provided RXB Services

- Fireline location (scouting and flagging)
- Fireline construction (streams, wetlines, dozer line, blow out lines/roads/trails, disked lines, hand line scrapes)
- Notorized prescribed burn plan preparation (RXBP)
- RXB execution
- RXB follow up, monitoring



Consultant Considerations To Include RX Fire As A Service

- Become certified in the states you will operate in
- Join your state(s) Prescribed Fire Council
- Insurance certificate that covers rx burning
- Become familiar with cost share opportunities and how they work that include firelines and burning
- Develop your own specific burn plan format
- Get familiar with GIS and mapping software
- Use VFD's and off duty sheriff office resources

Consultant Considerations (cont)

- Gain experience and confidence every opportunity you can
- Be conservative and professional
- Construct good firelines in the appropriate locations
- Deliver high level work, satisfied clients mean repeat business and referral to new clients
- Thorough planning with contingencies that can be implemented, break burn unit into smaller pieces when establishing firelines
- Have reliable personnel and equipment
- Take pictures before, during and after for the record

Steps In Developing RXBP With Landowners

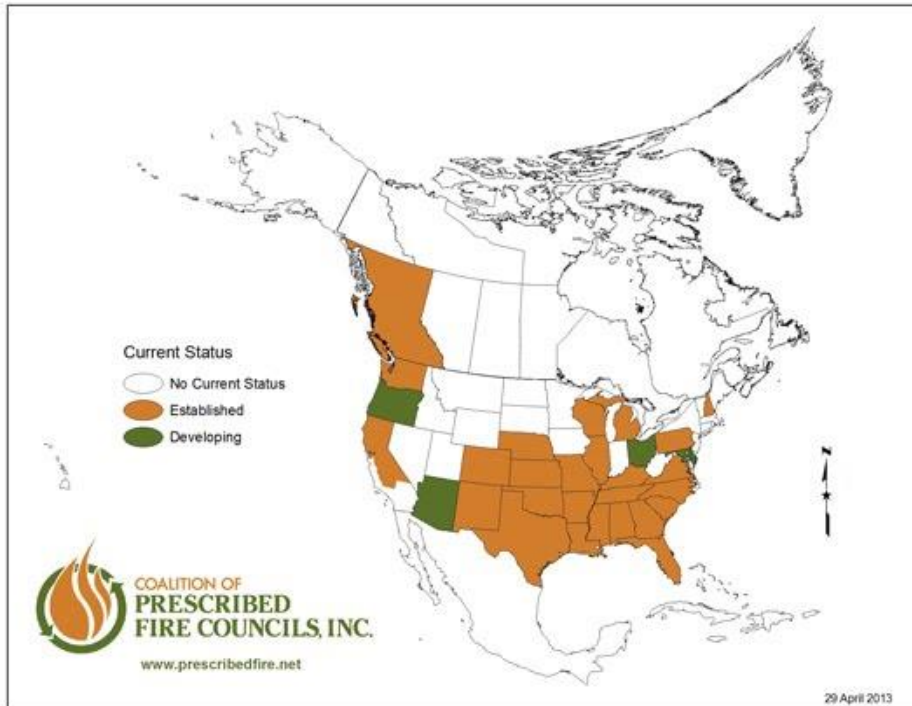
- Aerial photograph & topographic map analysis before site visit
- On site visit with landowner looking at past fire history, fuel types, easements, cemeteries, ROW, buried lines, inholdings, structures, timber reservations, encroachments, claims, disputes, property lines, corners, survey markers, TES, wells, unique hazards et al
- Determine landowners resource objective relating to RX fire use (hazard fuel reduction, wildlife habitat improvement, premarking burn, et al)
- Discuss options to enhance efficiency and reduce risk
- Determine landowners timing for treatments, tract specific issues & constraints
- Determine interest & eligibility for cost share relating to RX fire use (WHIP, EQIP, et al) for this and subsequent RX burns

Steps (continued)

- Agreement on project treatment, timing, costs, expectations
- Develop parameters or fire objectives to meet resource objective...season, ignition method (hand, ATV, aerial), ignition technique (backing, flanking, ring-fire, headfire, strip head, spot, chevron), 1 and 10-hour fuel moisture, fuel models, flame length, spread rate, KBDI range, probability of ignition, midflame wind speed, transport wind speed & direction, dispersion index, et al
- Develop the written RXBP including smoke screening, contacts, contingencies, mitigation
- Install firelines
- Execute burn
- Followup

Coalition of Prescribed Fire Councils, Inc.

- Over-arching goal: Create 1 voice to assist fire practitioners, policymakers, regulators & citizens with issues surrounding prescribed fire use.
- Mission: Promote appropriate use of prescribed fire for enhancing public safety, managing resources and sustaining environmental quality
- www.prescribedfire.net



Alabama Prescribed Fire Council

- Mission: Protect, conserve and expand the safe use of prescribed fire on Alabama's fire adapted landscape
- www.alpfc.org



Certified Prescribed Burn Manager Program in Alabama

- 4-day certification course
- 1-day recertification course every 5 years
- On-line burn permit access for CPBM
- Process managed by AFC

Impediments To Conducting RXB On Private Lands

- Similar to other “user groups” of RX fire
- 2012 survey by Coalition of RX Fire Councils (prescribedfire.net)
- Wildland-urban interface (WUI)
- Low priority
- Legal or policy issues
- Liability

Impediments (continued)

- Insurance
- Public perception
- Air quality (PM 2.5, ozone)
- Capacity (people, equipment, training)
- Weather
- Resources (limited funding, high implementation costs)

Liability Protection in AL

- No landowner or their agent that complies with the Act shall be liable for damage or injury caused by fire or smoke unless the landowner or their agent fails to act within the degree of care required of others similarly situated (in GA its gross negligence)
- PROVIDED...

AL Liability Protection (cont)

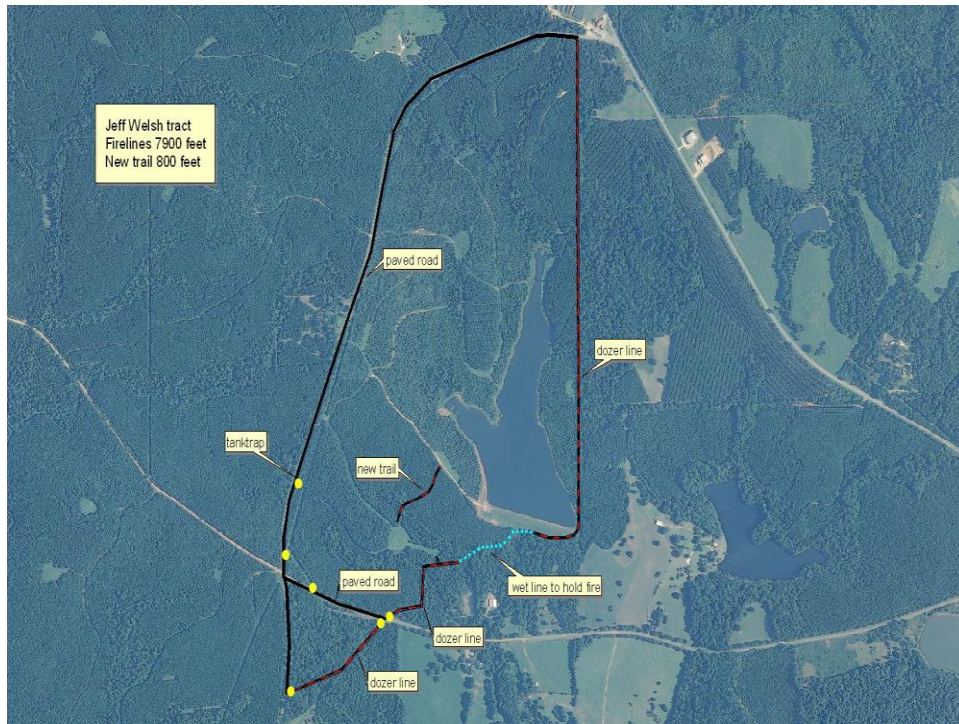
- At least one certified burn manager is supervising the burn or burns being conducted
- A written prescription (plan) is prepared and witnessed OR notarized prior to the burn
- AFC has issued a burn permit
- Burn is conducted pursuant to state laws applicable to prescribed burning

Minimum standards for RXBP per AL Prescribed Burn Act of 1995

- Landowner personal information (name, mailing address, phone #)
- RXBP planner info (name, address, phone, CBM #)
- Description of area (county, STR, acres to burn, fuel type, topography, understory, overstory description)
- Purpose of burn (resource objective)
- Preburn info (manpower, equipment, firing technique, SSA, special precautions)

Minimum standards (cont)

- Weather info (midflame windspeed and direction, min/max RH, max temp, transport windspeed & direction, mixing height, dispersion)
- Start and completion times
- Map of area to burn



PRESCRIBED BURNING PLAN

RXB PLAN #: 28-01-2013

LANDOWNER NAME: [REDACTED]

PHONE #: [REDACTED]

ADDRESS: [REDACTED] Opelika AL 36801

TRACT, STAND, LEGAL DESCRIPTION: Sec. 30 & 31, T21N, R26E, Chambers Co AL

LAST PBURN OR WILDLAND FIRE: no history

BURN ACREAGE: 297.4 acres

ACREAGE BY OBJECTIVE:

SITE PREP (PLANT): 0
 SITE PREP (SEEDING): 0
 CUS: 0
 TSI: 0
 WILDLIFE HAB IMP: 0
 HZD FUEL REDUCTION: 297.4
 RANGE IMP: 0
 BROWNSPOT: 0
 SPB : 0
 OTHER (specify): 0

SPECIFIC OBJECTIVES: PRIMARY OBJECTIVE OF HAZARD FUEL REDUCTION

BURN UNIT DESCRIPTION: 15 YR OLD UNTHINNED LOBLLOLY PLANTATIONS AND 10 YR OLD LONGLEAF PLANTATIONS WITH SCATTERED PATCHES OF THINNED LOBLLOLY PINE STANDS WITH UNDERSTORY SPRAYED RECENTLY. SCATTERED OPEN FIELDS AND HDWD DRAINS. THE SOUTH END IS A MATURE OAK HICKORY STAND THAT CONTAINS AN OLD HOUSE SITE THAT NEEDS TO BE BURNED DOWN.

TOPOGRAPHY-ASPECT-SLOPE: RIDGETOP TO GENTLY ROLLING SIDESLOPES 2-10% SLOPE; SEE TOPO MAP.

FUEL MODEL(S) AND % AREA REPRESENTED: FM-9 (90%), FM-1 (10%)

FUEL LOADING (tons/acre): FM-9 (8-10 TPA), FM-1(3 TPA)

CONTROL LINES (feet)

ROADS: 9,420
 STREAMS: 0
 WET LINE: 950
 DISKED OR GREEN FIELD EDGE: 0
 DOZER: 7,860
 HAND LINE: 0
 OLD BURN: 0

RESOURCE NEEDS

DOZER 0 TRACTOR/DISC 0 ATV SPRAYER 2 ATV TORCH 2 HELI 0
 DRIP TORCH 2 BLOWER 1 CHAINSAW 1 RAKES 2 SMOKE SIGNS 2
 PERSONNEL 2-3 VFD ENGINE 1 BACKPACK H2O 0 OTHER (specify) 0

ADJOINING CONCERNS:

PLANTATIONS <15' N PUBLIC ROADS Y HOMES N CURED HAYFIELDS N
 CHICKEN HOUSES N STRUCTURES Y POWER POLES/BOXES Y FENCES N

SPECIAL CONSIDERATIONS: NEARBY HOMES, AL-147, CR-22, US-431.

SMOKE SCREENING COMPLETED: YES

FIRING TECHNIQUE: BACKING Y FLANKING Y STRIP-HEAD N HEADFIRE N

FIRING METHODS: HAND Y ATV Y HELI N

DISTANCE SCREENED: 1 MILES

SMOKE SENSITIVE TARGETS: AL-147, CR -22.

MITIGATION: START BURN EARLY TO SAFEN LINES. PLACE SIGNS ALONG AL-147 AND CR-22 AND NOTIFY ADJOINING AND NEARBY HOMES OF BURN. CONTACT CHAMBERS COUNTY AFC FORESTER, CONTACT CHAMBERS COUNTY EMA OFFICE AND OAK BOWERY VFD. IF SMOKE FROM THE BURN CAUSES ANY VISIBILITY PROBLEMS ON ANY PUBLIC ROADS, CONTACT CHAMBERS COUNTY SHERIFFS OFFICE FOR ASSISTANCE. USE/PAY OAK BOWERY VFD FOR TRAFFIC CONTROL (DONATION). COMPLETE FIRING BY 1430 AND BURN WHEN DISPERSION INDEX IS AT LEAST 41 OR BETTER (GOOD MIXING HEIGHT & TRANSPORT WIND SPEEDS). CHECK FOR POTENTIAL OF NITE TIME SMOKE MOVING DOWN DRAIN; IF NEEDED MOVE SMOKE SIGNS WHERE SMOKE COLLECTION AT LOW POINT IS POSSIBLE.

BURNING PERMIT #: _____
 DATE/TIME AUTHORIZED:

PRESCRIPTION PARAMETERS

| | DESIRED | FORECAST |
|---------------------|-----------------|----------|
| TEMP | 40-60 | |
| RH | 30-50% | |
| MIDFLAME WS | NW, W 2-4 mph | |
| 20' WINDS | NW, W 5-10 mph | |
| 1 HR FM | 7-10% | |
| 10 HR FM | 11-12% | |
| LIVE FM | N/A | |
| DISPERSION INDEX | 41+ | |
| MIXING HEIGHT (MIN) | 3000 feet | |
| TRANSPORT DIR & WS | NW, W; 9-20 mph | |

| | TEST FIRE | OBS 1 | OBS 2 | OBS 3 | OBS 4 |
|------------------|-----------|-------|-------|-------|-------|
| DATE | | | | | |
| TIME | | | | | |
| MIDFLAME WS | | | | | |
| 1 HR FM | | | | | |
| 10 HR FM | | | | | |
| TEMP | | | | | |
| RH | | | | | |
| FLAME LENGTH | | | | | |
| SKY | | | | | |
| DRYING POTENTIAL | | | | | |
| HOURS SUN | | | | | |
| % PPT | | | | | |
| START FIRING | | | | | |
| COMPLETE FIRING | | | | | |

RXBP PREPARED BY: JOHN R. STIVERS, CF-548, RF-1889, AL CERT RXB #448
 DATE: 2-4-2013
 TIME: 1230 CST

ATTACHMENTS:

BURN MAP _____
 SMOKE SCREENING MAP _____
 PICTURES _____
 WEATHER FORECAST __ (AFC)
 ORGANIZATION _____
 CONTACTS MADE _____
 BEHAVE RUNS _____

STATE OF ALABAMA
 COUNTY

I, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN SAID STATE, HEREBY CERTIFY THAT THIS BURNING PLAN WAS SIGNED BY JOHN R. STIVERS, A STATE OF ALABAMA CERTIFIED PRESCRIBED FIRE MANAGER (#448), PRIOR TO THE EXECUTION AND IMPLEMENTATION OF THE PRESCRIBE BURN AS ACKNOWLEDGED BEFORE ME ON THIS DATE GIVEN UNDER MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC:
 DATE:
 MY COMMISSION EXPIRES:

POST BURN EVALUATION

DATE OF BURN: 28-01-2013
 RXBP PLAN NUMBER:
 DATE RESULTS EVALUATED:
 EVALUATION BY:
 OBJECTIVES MET?:
 AMOUNT OF LITTER LEFT:
 % CROWN SCORCH: SAPLINGS ___ PULPWOOD ___ SAWTIMBER ___
 SPOTTING:
 FORECAST ACCURATE?:
 SMOKE RELATED PROBLEMS?:
 PUBLIC COMPLAINTS?:
 ADVERSE EFFECTS?:
 RESTORATION NEEDS?:
 CONTROL PROBLEMS?:
 NEED FOR FUTURE EVALUATION?:
 REMARKS:

Tools Available to Use in RX Fire Planning & Execution

- Smoke screening tools from Southern High Resolution Modeling Consortium (shrmc.ggy.uga.edu/smoke)
- Simple smoke screening
- VSMOKE-Web (estimates PM 2.5 and ground level visibility)
- PB-Piedmont (estimates smoke movement at night in Piedmont region)

Tools (continued)

- Photo series guides (Joint Fire Sciences projects)...personal involvement with this
- www.fs.fed.us/pnw/fera/publications/photo_series_pubs
- Southeast US including post hurricane fuels

Tools (continued)

- Drought index Keetch-Byram Drought Index (KBDI)-November 1968; still used today across US
- USDA Forest Service Research Paper SE-38
- Recommend local calculations versus general maps; KBDI is very site specific particularly in the summer and fall months

Tools (continued)

- Fire behavior prediction systems to estimate flame length and spread rates (BEHAVE model or nomograms)
- Estimates fire behavior based on fuel model, terrain & weather inputs
- Free version at <http://fire.org>
- Trial version at Remsoft (www.remsoft.com)

Tools (continued)

- Fireline Handbook Appendix B: Fire Behavior, April 2006, PMS 410-2, NFES 2165
- Outstanding pocket guide that can provide non-computer fire behavior predictions
- Fine fuel moisture estimates, wind reduction factors, probability of ignition, flame length, spread rate, fuel models

Tools (continued)

- On site weather & recording fire behavior observations (temp, RH, windspeed, direction, fuel moisture, flame length, spread rate)
- Use anemometers, psychrometers, Appendix B tables, visual observations
- Take time to record your observations (location on the burn and time)

Tools (continued)

- Alabama Forestry Commission website (forestry.state.al.us)
- Fire weather forecast from NWS
- Other maps, drought & weather related links
- Fire in the woods link

Monitoring and Success Criteria

- Have clearly stated resource objective that can be visually measured (keep it simple)
- For example, resource objective is “hazard fuel reduction” in a 5 year old loblolly pine plantation...specific objective may be reduce surface litter layer across 75% of the site & keep crown scorch less than 50%... this can be observed post burn to decide whether or not the objective was met



Monitoring (continued)

- Document on monitoring section of your RXBP items such as litter depth remaining, scorch (saplings, pulpwood, sawtimber), spotting, forecast accuracy, smoke problems, complaints, adverse effects, restoration needs, control problems, need for future evaluation
- Monitoring may or may not be able to perform on the same day as the burn
- Take pictures before, during and after if you feel you need it





Needed Research To Improve Our Ability To Burn On Private Lands

- Fuel consumption model validation...need to know tons/acre by fuel type to better assist air quality regulators concerning emission factors
- More information concerning human dimensions and public acceptance of the need for rx fire...need an aggressive public support campaign and understand the consequences of keeping fire out of these fire adapted and dependant systems
- Continue to refine smoke predictive models (day and night movement of smoke)
- Liability is a big constraint; need affordable rates; need insurance industry to better understand what we do and risk categories; need them to understand our success rate and not be afraid to enter this area
- Capacity also identified as barrier, need to improve these areas (personnel, training, equipment)
- Weather is a barrier identified also; need improvements in fire weather forecasting farther out...personally I think its working good but always room for improvement...GA has their own meteorologists that performs the fire weather forecasts for their statewide customers



Landowner Involvement

- I welcome landowners to be present on the burn and as involved as they want to be when lines are being put in
- As a minimum, explain the steps and processes from A to Z so they know its much more than “dropping the match”
- Maintain control of the burn and know where all persons are so no one wanders around
- I will give landowners opportunity to “drag the torch” but only in locations or sections of the project I direct them on UNLESS they are experienced (rare)
- I will provide the landowner with a copy of the completed burn plan with all the recorded observations and post burn monitoring if they desire that for their records



Code of Ethics For Prescribed Burners (GA PFC), 14 canons

- Get trained
- Be “certified” in your state
- Prepare and follow your burn plan
- Always obtain proper burn authorization
- Know and follow burn laws and regulations in Georgia
- Be a good neighbor. Notify adjoining landowners before you burn

Code of Ethics continued

- Practice good smoke management from ignition until the fire is out
- Minimize public impact. Self-regulate or someone else will do it for you
- Maintain a reasonable margin of safety. Always be conservative.
- Never take short-cuts in planning or execution.
- Maintain situational awareness; never fail to act appropriately to the level of threat
- Do NOT fail to act when called for

Code of Ethics continued

- The public deserves the highest degree of professionalism from you with minimal impact to their daily routines. Nurture that trust because our right to burn is a privilege
- Remember, it is not how MUCH you burn today; it is how SAFE you burn today



It's not hard to be wise, think
of something stupid and then
DON'T DO IT





Upcoming Webinars:

- **October 17:** *Federal Agency Ground-Based Burn Crews and the Prescribed Fire Training Center*
- **October 23:** *Prescribed Burning Techniques and Lessons Learned*
- **October 31:** *Techniques, Planning, and Precautions in Oklahoma, Arkansas & Texas*
- **Nov 6:** *Planning Large-Scale Burns*

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