

EXOTIC PLANT SPECIES OF THE COLUMBIA BASIN

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INTERIOR COLUMBIA BASIN
ECOSYSTEM MANAGEMENT PROJECT

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Project Report

EXOTIC PLANT SPECIES OF THE COLUMBIA BASIN

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This project report provides:

- 1) PART I. An alphabetic listing, with appropriate naming conventions, of exotic species that have reported for the 5 state region.
- 2a) PART IIIA. Maps showing the known distribution by county of exotics that have been reported from all data sources for at least 25 counties, or based only on herbarium records those exotics having a linear expansion rate equivalent to 25 counties per century, or based only on herbarium records those exotics increasing their range at an exponential rate.
- 2b) PART IIIB. Summary distribution data for exotics currently of limited distribution or increasing at a slow rate (not meeting the any of the criteria listed in 2a) are provided in tabular form.
- 3) PART IIIA. Graphs showing the population expansion curves (number of counties reporting over time) for exotics meeting the 2a criteria).
- 4) PART IIIA. Polynomial equations quantifying the rate of spread throughout the region for species meeting the 2a criteria.
- 5) PART IV. Habitat colonized by each exotic.
- 6) PART II. Identification as to which exotics have legal status as noxious weeds.

PART I.

EXOTICS FOUND IN THE COLUMBIA BASIN ACCEPTED AND REJECTED NAMES

The definition of exotic for this Columbia Basin project is plants not native to North America. In cases for which the origin is disputed we have attempted to list those species as exotic.

INVADERS uses the USFS Region 1 nomenclature for most taxa. Hitchcock and Cronquist (1973) is the first reference for almost all the species in the Columbia Basin project area. Dorn (1984) is used for species not reported by Hitchcock & Cronquist. Hortus Third (1976) and Flora Europaea (1964-1983) are then used for exotics which have been discovered in the Columbia Basin after the publication of the regional flora. Various world flora were consulted for naming and authority information on recently found exotics not listed in Hortus or Flora Europaea. Kartesz (1994) has recently published a synonymy text for North America. The INVADERS Database Release 4.1 has made only limited use of this new reference; Kartesz being used only for plants not found in the above references. Kartesz has returned to many of the older names.

The synonyms that are incorporated in the database are the pertinent names. Those that are currently used in the region because they appear in regional flora, contemporary manuals, or recent publications. The INVADERS database is not a monographic synonymy listing and is not intended to include all historic published names. It is a "manual" level listing.

Exotic species are listed alphabetically. The accepted name appears in roman type. Rejected names or synonyms are printed in *italic type*. An -> below the synonym leads to the accepted name used in this document. However, the INVADERS software will retrieve distribution data from a query using any listed synonym.

Taxonomic divisions below species are also indicated in *italic type*. Distribution records for subspecies, varieties, or forms are combined to species level for most species in this report. This is because the distribution records that attempt to assign divisions below the species level are sometimes inaccurate; and subspecies differences often are not of practical significance for weed management.

Common names for most exotics are derived from the Weed Science Society of America listings. WSSA is attempting to standardize common names. Some of the WSSA names do not correspond to common names used in the Columbia Basin.

The listing has 1,100 scientific names which represent 862 exotics at the species level present in the Columbia Basin.

<i>Artemisia vulgaris</i> L.	mugwort	forb
<i>Arum dracuncululus</i> L.		forb
-> <i>Dracunculus vulgaris</i> Schott.		
<i>Arum italicum</i> Mill.	Italian arum	forb
<i>Asparagus officinalis</i> L.	asparagus	forb
<i>Asperugo procumbens</i> L.	catchweed	forb
<i>Asperula humifusa</i> Bieb.	bedstraw	forb
-> <i>Galium humifusum</i> Bieb.		
<i>Asphodelus fistulosus</i> L.		forb
<i>Astilbe simplicifolia</i> Mak.	spiraëa	f o r b
<i>Astragalus cicer</i> L.	chick pea milk vetch	forb
<i>Astragalus falcatus</i> Lam.	Russian sickle milk vetch	forb
<i>Atriplex halimus</i> L.	sea orach	shrub
<i>Atriplex hortensis</i> L.	garden orach	forb
<i>Atriplex nummularia</i> Lindl.	saltbush	s h r u b
<i>Atriplex oblongifolia</i> Waldst & Kit.	oblong leaved shadscale	f o r b
<i>Atriplex rosea</i> L.	red orach	forb
<i>Atropa belladonna</i> L.	deadly nightshade	forb
<i>Aucuba japonica</i> Thunb.	, Japanese laurel	shrub
<i>Avena fatua</i> L.	wild oat	g r a m i n o i d
<i>Avena sativa</i> L.	oats	graminoid
<i>Avena sterilis</i> L.	animated oat	graminoid
<i>Axyris amaranthoides</i> L.	'Russian pigweed	f o r b
<i>Balsamita major</i> Desf.	costmary	forb
-> <i>Chrysanthemum balsamita</i> L.		
<i>Barbarea verna</i> (Mill.) Asch.	early wintercress	forb
<i>Barbarea vulgaris</i> R. Br.	yellow rocket	forb
<i>Bassia hyssopifolia</i> (Pall.) Kuntze.	fivehook bassia	forb
<i>Belamcanda chinensis</i> (L.) DC.	blackberry lily	forb
<i>Bellis perennis</i> L.	English daisy	forb
<i>Berberis thunbergii</i> DC.	Japanese barberry	s h r u b
<i>Berberis vulgaris</i> L.	European barberry	shrub
<i>Berteroa incana</i> (L.) DC.	hoary alyssum	forb
<i>Beta vulgaris</i> L.	seabeet	f o r b
<i>Betula lenta</i> L.	cherry birch	tree
<i>Betula pendula</i> Roth.	European white birch	tree
<i>Bidens pilosa</i> L.	hairy beggaricks	forb
<i>Borago officinalis</i> L.	common borage	forb
<i>Brassica alba</i> Ann.	white mustard	f o r b
<i>Brassica arvensis</i> (L.) Rabenh.	wild mustard	forb
-> <i>Brassica kaber</i> (D.C.) Wheeler		
<i>Brassica campestris</i> L.	birdsrape mustard	forb
<i>Brassica fimbriata</i> L.	wild cabbage	forb
var. <i>Brassica oleraceae</i> L.		
<i>Brassica hirta</i> Moench	white mustard	forb
<i>Brassica juncea</i> (L.) Czern.	Indian mustard	forb
<i>Brassica kaber</i> (D.C.) Wheeler	wild mustard	forb
<i>Brassica napus</i> Ann.		forb
<i>Brassica nigra</i> (L.) Koch	black mustard	forb
<i>Brassica oleracea</i> L.	wild cabbage	forb
-var. <i>fimbriata</i>		
-> <i>Brassica oleraceae</i> L.		
<i>Brassica oleraceae</i> L.	wild cabbage	forb
<i>Brassica rapa</i> L.	birdsrape mustard	forb
-> <i>Brassica campestris</i> L.		
<i>Bromus arvensis</i> L.		graminoid
<i>Bromus brizaeformis</i> Fisch. & Mey.	rattlesnake brome	graminoid

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Abies pinsapo Boiss.	Spanish fir	tree	
Abutilon theophrasti Medic.	velvetleaf	forb	Noxious
Acer circinatum Pursh.	vine maple	tree	
Acer ginnala Maxim.	amur maple	tree	
Acer grandidentatum Nutt.	bigtooth maple	shrub	
Acer macrophyllum Pursh.	big leaf maple	tree	
Acer palmatum Thunb.	Japanese maple	tree	
var. <i>heptalobum</i>			
var. <i>matsumaruae</i>			
var. <i>palmatum</i>			
Acer platanoides L.	Norway maple	tree	
Acer pseudo-platanus L.	sycamore	tree	
Acer rubrum L.	red maple	tree'	
Acer saccharinum L.	silver maple	tree	
Acer saccharum Marsh.	sugar maple	tree	
Achillea nobilis L.	noble yarrow	f o r b	
Achillea ptarmica L.	sneezeweed	forb	
Aconitum carmichaelii Debeauz.		f o r b	
Aconitum x bicolor		f o r b	
Acroptilon repens (L.) DC.	Russian knapweed	forb	Noxious
-> Centaurea repens L.			
Adonis aestivalis L.	pheasant eye	forb	
Adonis annua L.	annual adonis	forb	
Aegilops cylindrica Host	jointed goatgrass	graminoid	Noxious
Aegle sepiaria DC.	trifoliate orange	tree	
-> Poncirus trifoliata (L.) Raf.			
Aegopodium podagraria L.	bishop's goutweed	forb	
Agropyron cristatum (L.) Gaertn.	crested wheatgrass	graminoid	
Agropyron elongatum (Host) Beauv.	tall wheatgrass	graminoid	
Agropyron intermedium (Host) Beauv.	intermediate wheatgrass	graminoid	
Agropyron intermedium (Host) Beauv.		graminoid	
var. <i>intermedium</i>			
-> Agropyron intermedium (Host) Beauv.			
Agropyron pungens (Pers.) Meldaris		forb	
-> Elymus pungens (Pers.) Meldaris			
Agropyron repens (L.) Beauv.	quackgrass	graminoid	Noxious
Agropyron trichophorum (Link) Richter	intermediate wheatgrass	graminoid	
-> Agropyron intermedium (Host) Beauv.			
Agropyron triticeum Gaertn.	annual wheatgrass	graminoid	
Agrostemma githago L.	corn cockle	forb	
Agrostis alba L.	creeping bentgrass	graminoid	
var. <i>palustris</i> (Huds.) Pers.			
Agrostis alba L.	redtop	graminoid	
-> Agrostis stolonifera L.			
Agrostis gigantea Roth	redtop	graminoid	
-> Agrostis stolonifera L.			
Agrostis interrupta L.	interrupted apera	graminoid	
Agrostis stolonifera L.	creeping bentgrass	graminoid	
Ailanthus altissima (Mill.) Swingle.	tree of heaven	t r e e	
Aira caryophylla L.		graminoid	
Ajuga reptans N. Taylor	carpet bungleweed	forb	
-> Ajuga reptans L.			
Ajuga reptans L.	carpet bugle	forb	
Alcea rosea L.	hollyhock	forb	
-> Althaea rosea Cav.			
Alchemilla vulgaris L.	lady's mantle	forb	

<i>Alchemilla xanthochlora</i> Rothm.	lady's mantle	f o r b	
-> <i>Alchemilla vulgaris</i> L.			
<i>Alhagi pseudalhagi</i> (Bieb.) Desv.		forb	Noxious
<i>Allium giganteum</i> Regel.		forb	
<i>Allium triquetrum</i> L.		forb	
<i>Allium vineale</i> L.	wild garlic	forb	
<i>Alopecurus arundinaceus</i> Poir.	creeping foxtail	graminoid	
<i>Alopecurus mysosuroides</i> Huds.	black twitch	graminoid	Noxious
<i>Alopecurus pratensis</i> L.	meadow foxtail	graminoid	
<i>Alopecurus ventricosus</i> Pers.	meadow foxtail	graminoid	
-> <i>Alopecurus arundinaceus</i> Poir.			
<i>Alternanthera sessilis</i> (L.) DC.		forb	
<i>Althaea officinalis</i> L.	marshmallow	forb	
<i>Althaea rosea</i> Cav.	hollyhock	f o r b	
<i>Alyssum alyssoides</i> L.	yellow alyssum	f o r b	
<i>Alyssum desertorum</i> Stapf	dwarf alyssum	forb	
<i>Amaranthus caudatus</i> L.	tasselflower	forb	
<i>Amaranthus hybridus</i> L.	smooth pigweed	forb	
<i>Anacharis densa</i> Planch.	Brazilian elodea	forb	Noxious
-> <i>Elodea densa</i> Casp. (Planch)			
<i>Anchusa arvensis</i> (L.) Bieb.	small bugloss	forb	
<i>Anchusa azurea</i> Mill.	Italian bugloss	f o r b	
<i>Anchusa italica</i> Retz.	Italian bugloss	forb	
-> <i>Anchusa azurea</i> Mill.			
<i>Anchusa officinalis</i> L.	common bugloss	forb	Noxious
<i>Andromeda japonica</i> Thunb.	lily of the valley bush	s h r u b	
-> <i>Pieris japonica</i> (Thunb.) D. Don. ex G. Don.			
<i>Anethum graveolens</i> L.	dill	forb	
<i>Anthemis arvensis</i> L.	corn chamomile	forb	
<i>Anthemis cotula</i> L.	mayweed chamomile	forb	
<i>Anthemis tinctoria</i> L.	yellow chamomile	forb	
<i>Anthriscus caucalis</i> Bieb.		forb	
<i>Anthriscus cerefolium</i> (L.) Hoffm.	chervil	forb	
<i>Anthriscus scandicina</i> Mansfield	forb		
-> <i>Anthriscus caucalis</i> Bieb.			
<i>Anthriscus sylvestris</i> (L.) Hoffm.	cow parsley	forb	Noxious
<i>Anthriscus vulgaris</i> Pers. not Benh.		f o r b	
-> <i>Anthriscus caucalis</i> Bieb.			
<i>Anthyllis vulneria</i> L.	kidney vetch	forb	
<i>Antirrhinum orontium</i> L.	lesser snapdragon	forb	
<i>Apera interrupta</i> (L.) Beauv.	interrupted apera	graminoid	
-> <i>Agrostis interrupta</i> L.			
<i>Arabidopsis thaliana</i> (L.) Heynh.	mouse ear cress	forb	
<i>Arabis glabra</i> (L.) Bernh.	tower mustard	f o r b	
<i>Aralia elata</i> (Miq.) Seem. *	Japanese angelica	forb	
<i>Aralia japonica</i> Thunb.	Japanese fatsia	tree	
-> <i>Fatsia japonica</i> (Thunb.) Decne. & Planch.			
<i>Aralia sieboldii</i> Hort. ex C. Koch.	Japanese fatsia	tree	
-> <i>Fatsia japonica</i> (Thunb.) Decne. & Planch.			
<i>Arctium lappa</i> L.	great burdock	forb	
<i>Arctium minus</i> (Hill) Bernh.	common burdock	forb	Noxious
<i>Arctium tomentosum</i> Miller	woolly burdock	forb	
<i>Arenaria serpyllifolia</i> L.	thymeleaf sandwort	forb	
<i>Armoracia rusticana</i> Gaertn., B. Mey & Scherb	horseradish	forb	
<i>Arrhenatherum elatius</i> (L.) Presl.	tall oatgrass	graminoid	
<i>Artemisia absinthium</i> L.	absinth wormwood	f o r b	Noxious
<i>Artemisia annua</i> L.	annual wormwood	forb	

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Bromus commutatus Schrad.	hairy chess	graminoid	
<i>Bromus hordeaceus</i> L.	soft brome	graminoid	
-> Bromus mollis L.			
Bromus inermis Leys.	smooth brome	graminoid	
ssp. <i>inermis</i>			
Bromus japonicus Thunb.	Japanese brome	graminoid	
Bromus mollis L.	soft brome	graminoid	
Bromus' rigidus Roth	riggut b r o m e	g r a m i n o i d - -	
Bromus rubens L.	foxtail	graminoid	
Bromus secalinus L.	cheat	graminoid	
Bromus squarrosus L.	large flowered brome	graminoid	
Bromus sterilis L.	poverty brome	graminoid	
Bromus tectorum L.	downy brome	graminoid	
Bcyonia alba L.	white bryony	forb	Noxious
Bryonia dioica Jacq.	red bryony	forb	
Buddleia davidii Franch.	summer lilac	shrub	
<i>Buglossoides arvense</i> Johnst.	corn grom well	f o r b	
-> Lithospermum arvense L.			
Butomus umbellatus L.	flowering rush	forb	
Cakile edentula (Bigelow) Hooker.		f o r b	
Cakile maritima Scop.			forb
Calamagrostis koelerioides Vasey . .	fire reedgrass	graminoid	
<i>Calystegia pubescens</i> Lindl.	Japanese bindweed	f o r b	
-> Convolvulus japonicus Thunb.			
<i>Camelina dentata</i> Pers.	large seeded falseflax	forb	
-> <i>Camelina sativa</i> (L.) Crantz			
<i>Camelina microcarpa</i> Andrz.	smallseed false flax	forb	
<i>Camelina sativa</i> (L.) Crantz	largeseed falseflax	forb	
<i>Campanula amabilis</i> Leichtl.	willow bellflower	forb	
-> <i>Campanula persicifolia</i> L.			
<i>Campanula elatines</i> L. Adriatic	bellflower	forb	
<i>Campanula glomerata</i> Torr.	clustered bellflower	forb	
var. <i>acaulis</i> Rohn.			
var. <i>dahurica</i> Fisch. ex Ker-grawl			
<i>Campanula grandiflora</i> L.	canterberrybells	forb	
var. <i>calycanthema</i> T. Moore			
-> <i>Campanula medium</i> L.			
<i>Campanula grandiflora</i> Lam., not Jacq.	canterbeirybells	f o r b	
-> <i>Campanula medium</i> L.			
<i>Campanula latiloba</i> A. DC.	willow bellflower	forb	
-> <i>Campanula persicifolia</i> L.			
<i>Campanula medium</i> L.	canterberrybells	forb	
<i>Campanula persicifolia</i> L.	willow bellflower	forb	
<i>Campanula phytidocalyx</i> Boiss & Noe	willow bellflower	forb	
-> <i>Campanula persicifolii</i> L.			
<i>Campanula planiflora</i> Hort. not Lam. or Engelm.	willow bellflower		forb
-> <i>Campanula persicifolia</i> L.			
<i>Campanula rapunculoides</i> L.	creeping bellflower	f o r b	
<i>Cannabis sativa</i> L.	m a r i j u a n a	forb	
<i>Capsella bursa-pastoris</i> (L.) Medic.	shepherd's purse	f o r b	
<i>Caragana arborescens</i> Lam.	caragana	shrub	
<i>Caragana pygmaea</i> DC.	pea shrub	shrub	
<i>Cardaria chalapensis</i> (L.) Hand.	chalapa hoarycress	forb	
<i>Cardaria draba</i> (L.) Desv.	hoary cress	forb	Noxious
<i>Cardaria pubescens</i> (Meyer) Jarm.	hairy whitetop	f o r b	Noxious
<i>Carduus acanthoides</i> L.	plumeless thistle'	forb	Noxious

<i>Cerastium glomeratum</i> Thuill.	sticky chickweed	forb	
-> <i>Cerastium viscostim</i> L.			
<i>Cerastium siculum</i> Guss.		forb	
<i>Cerastium tomentosum</i> L.	snow in summer	forb	
<i>Cerastium viscosum</i> L.	sticky chickweed	forb	
<i>Cerastium vulgatum</i> L.	mouseear chickweed	forb	
<i>Chaenomeles japonica</i> (Thunb.) Lindl. ex Spach.	lesser flowering quince		shrub
var. <i>alpina</i> Maxim. <i>Chaenomeles japonica</i> (Thunb.) Lindl. ex Spach.			
var. <i>pygmaea</i> Maxim. <i>Chaenomeles japonica</i> (Thunb.) Lindl. ex Spach.			
<i>Chaenomeles sinensis</i> (Thouin) K o e h n e .	quince		shrub
-> <i>Cydonia sinensis</i> Thouin			
<i>Chaenorrhinum minus</i> (L.) Lange	dwarf snapdragon	forb	Noxious
<i>Chamaecyparis pisifera</i> (Siebold. & Zucc.) Endl.	sawara cypress		tree
<i>Chelidonium majus</i> L.	greater celandine	f o r b	
<i>Chenopodium album</i> L.	common lambsquarters	forb	
<i>Chenopodium ambrosioides</i> L. Mexican	tea	forb	
<i>Chenopodium berlandieri</i> Moq.	netseed lambsquarters	forb	
-> <i>Chenopodium album</i> L.			
<i>Chenopodium botrys</i> L.	Jerusalem- oak goosefoot	forb	
<i>Chenopodium foliosum</i> (Moench) Asch.	leafy goosefoot	forb	
<i>Chenopodium gigantospermum</i> Aellen	mapleleaf goosefoot	forb	
<i>Chenopodium glaucum</i> L.	oakleaf g o o s e f o o t	forb	
<i>Chenopodium hybridum</i> L.	maple leaved goosefoot	forb	
-> <i>Chenopodium gigantospermum</i> Aellen			
<i>Chenopodium murale</i> L.	n e t t l e l e a f g o o s e f o o t	forb	
<i>Chenopodium salinum</i> Standl.	oakleaf goosefoot	forb	
-> <i>Chenopodium glaucum</i> L.			
<i>Chondrilla juncea</i> L.	rush skeletonweed	forb	Noxious
<i>Chorispora tenella</i> (Pall.) DC.	blue mustard	f o r b	
<i>Chrysanthemum balsamita</i> L.	costmary chrysanthemum	f o r b	
<i>Chrysanthemum leucanthemum</i> L.	oxeye daisy	f o r b	Noxious
<i>Chrysanthemum maximum</i> Ramond. not Hort.	max chrysanthemum		forb
<i>Chrysanthemum parthenium</i> (L.) Bernh.	feverfew	forb	
<i>Cicer arietinum</i> L.	chick pea	forb	
<i>Cichorium endiva</i> L.	endive	forb	
<i>Cichorium intybus</i> L.	chicory	forb	
<i>Cirsium arvense</i> (L.) Scop.	Canada thistle	forb	Noxious
var. <i>horridum</i> Wimm. & Grab. <i>Cirsium arvense</i> (L.) Scop.			
<i>Cirsium vulgare</i> (Savi) Tenore	bull thistle	forb	Noxious
<i>Cistus actutifolius</i> Sweet.		forb	
-> <i>Cistus x hybridus</i> Pourr.			
<i>Cistus corbariensis</i> Pourr.		forb	
-> <i>Cistus x hybridus</i> Pourr.			
<i>Cistus salvifolius</i> L.	rock rose,	forb	
<i>Cistus x hybridus</i> Pourr.		forb	
<i>Citrus trifoliata</i> L.	trifoliate orange	t r e e	
-> <i>Poncirus trifoliata</i> (L.) Raf.			
<i>Clematis vitalba</i> L.		forb	
<i>Clerodendrum thompsoniae</i> Balf.	bleedingheart glory bower	s h r u b	
<i>Clerodendrum trichotomum</i> Thunb.		shrub	
var. <i>fargesii</i> @ode.) Rehd.			
<i>Cnicus benedictus</i> L.	blessed thistle	forb	
<i>Commelina benghalensis</i> L.		f o r b	
<i>Commelina communis</i> L.	Asiatic dayflower	forb	
<i>Conium maculatum</i> L.	poison hemlock	forb	Noxious
<i>Conringia orientalis</i> (L.) Dumort.	haresear mustard	forb	

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<i>Carduus benedictus</i> (L.) Steud.	blessed thistle	f o r b	
-> <i>Cnicus benedictus</i> L.			
<i>Carduus crispus</i> L.	welted thistle	forb	
<i>Carduus nutans</i> L.	musk thistle	forb	Noxious
<i>Carduus nutans</i> L.	musk thistle	forb	Noxious
ssp. <i>leiophyllus</i> (Petrovic) Stoj. & Stef.	<i>Carduus nutans</i> L.		
<i>Carduus nutans</i> L.	musk thistle	forb	Noxious
ssp. <i>macrocephalus</i> (desf.) Nyman.	<i>Carduus nutans</i> L.		
<i>Carduus pycnocephalus</i> L.		forb	Noxious
<i>Carduus pycnocephalus</i> L.		forb	Noxious
spp. <i>albidus</i> (Bieb.) Kazmi.	<i>Carduus pycnocephalus</i> L.		
<i>Carduus tenuiflorus</i> Curtis		forb	Noxious
<i>Carpinus betulus</i> L.	European hornbeam	tree	
<i>Carthamus leucocaulos</i> L.		forb	Noxious
<i>Carthamus tinctorius</i> L.	safflower	forb	
<i>Carum carvi</i> L.	common caraway	forb	
<i>Carum petroselinum</i> (L.) Benth. & Hook.	parsley	f o r b	
-> <i>Petroselinum crispum</i> (Mill.) Nyman ex A.W. Hill.			
<i>Catalpa speciosa</i> Warder	northern catalpa	tree	
<i>Celastrus articulatus</i> Thunb.	'oriental bittersweet	shrub	
-> <i>Celastrus orbiculata</i> Thunb.			
<i>Celastrus orbiculata</i> Thunb.	oriental bittersweet	shrub	
<i>Cenchrus longispinus</i> (Hack.) Fern.	longspine sandbur	graminoid	Noxious
<i>Centaurea calcitrapa</i> L.	purple starthistle	forb	Noxious
<i>Centaurea cyanus</i> L.	cornflower	forb	
<i>Centaurea dealbata</i> Willd. 'Per.	knapweed	forb	
<i>Centaurea diffusa</i> Lam.	diffuse knapweed	forb	Noxious
<i>Centaurea iberica</i> Trevir ex K. Spreng.	Iberian starthistle	f o r b	Noxious
<i>Centaurea jacea</i> L.	brown knapweed	f o r b	
<i>Centaurea juncea</i> L.	Knapweed	f o r b	Noxious
<i>Centaurea juncea</i> x <i>nigra</i>	Unknown Knapweed	forb	Noxious
<i>Centaurea macrocephala</i> Pushk. ex Willd.	bighead knapweed	forb	Noxious
<i>Centaurea maculosa</i> Lam.	spotted knapweed	forb	Noxious
<i>Centaurea montana</i> L.	mountain knapweed	forb	
<i>Centaurea nigra</i> L.	black knapweed	forb	Noxious
<i>Centaurea nigrescens</i>	Unknown Knapweed	forb	Noxious
<i>Centaurea pratensis</i> Thuill.	meadow knapweed	forb	Noxious
<i>Centaurea repens</i> L.	Russian knapweed	f o r b	Noxious
<i>Centaurea scabiosa</i> L.	scabious star thistle	forb	
<i>Centaurea solstitialis</i> L.	yellow starthistle	forb	Noxious
<i>Centaurea squarrosa</i>	squarrose knap weed	f o r b	Noxious
-> <i>Centaurea virgata</i> Lam.			
<i>Centaurea trichocephala</i> Bieb. ex Willd.		forb	
<i>Centaurea triumphetti</i> All.	squarrose knapweed	forb	Noxious
-> <i>Centaurea virgata</i> Lam.			
<i>Centaurea virgata</i> Lam.	squarrose knapweed	forb	Noxious
ssp. <i>squarrosa</i> Gugl.			
<i>Centaureum erythraea</i> Raf.	common centaury	forb	
-> <i>Centaureum umbellatum</i> Gilib.			
<i>Centaureum umbellatum</i> Gilib.	European centaury	f o r b	
<i>Centranthus ruber</i> (L.) DC.	red valerian	f o r b	
<i>Cerastium columnae</i> Ten.	snow in summer	f o r b	
-> <i>Cerastium tomentosum</i> L.			
<i>Cerastium dubium</i> (Bast.) O. Schwarz.		forb	
<i>Cerastium fontanum</i> Baumg.	common chickweed	forb	
-> <i>Cerastium vulgatum</i> L.			

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<i>Consolida ambigua</i> (L.) Ball & Heywood	rocket larkspur	forb	
-> <i>Delphinium ajacis</i> L.			
<i>Convallaria majalis</i> L.	lily of the valley	forb	
<i>Convolvulus arvensis</i> L.	field bindweed	f o r b	Noxious
<i>Convolvulus japonicus</i> Thunb.	Japanese bindweed	forb	
<i>Corchorus japonicus</i> Thunb.	Japanese rose	shrub	
-> <i>Kerria japonica</i> (L.) DC.			
<i>Coriandrum sativum</i> L.	coriander	forb	
<i>Corispermum hyssopifolium</i> L.	hyssopleaf tickseed	forb	
<i>Corispermum nitidum</i> Kit.	shiny bugseed	forb	
<i>Corispermum orientale</i> Lam.	common bugseed	forb	
<i>Corispermum sibericum</i> Iljin	Siberian bugseed	forb	
<i>Corispermum villosum</i> Rydb.	c o m m o n bugseed	forb	
-> <i>Corispermum orientale</i> Lam.			
<i>Cornus mas</i> L.	cornelian cherry	tree	
<i>Coronilla varia</i> L.	trailing crownvetch	forb	
<i>Corylus avellana</i> L.	European hazel	shrub	
<i>Corylus colurna</i> L.	Turkish hazel	tree	
<i>Cotinus coggygria</i> Scop.	smoke bush	shrub	
<i>Cotoneaster acutifolius</i> Turcz.		forb	
<i>Cotoneaster bullatus</i> Bois.		f o r b	
form <i>floribundus</i> (Stapf.) Rehd. & E.H. Wils.			
var. <i>marcrophyllus</i> Rehd. & E.H. Wils			
<i>Cotoneaster franchetti</i> Bois.		forb	
var. <i>cineracens</i> Rehd. <i>Cotoneaster</i>			
<i>Cotoneaster lucidus</i> Schlechtend.		forb	
<i>Cotoneaster tenuipes</i> Rehd. & E.H. Wils.		forb	
<i>Cotoneaster tomentosus</i> (Ait.) Lindl.		forb	
<i>Crataegus monogyna</i> Jacq.	one seeded hawthorn	shrub	
<i>Crataegus oxycantha</i> (Poir.) DC.	English hawthorn	tree	
<i>Crepis capillaris</i> (L.) Wallr.	smooth hawksbeard	forb	
<i>Crepis setosa</i> Hailer f.	bristly hawksbeard	forb	
<i>Crocsmia masoniorum</i> (L. Bolus.) N.E. Br.	monterbretia		forb
<i>Crocsmia pottsii</i> (Bak.) N.E. Br.	monterbretia	forb	
<i>Crocsmia x crocsmiiflora</i> (V.Lemoine ex E. Morr) N.E. Br.	monterbretia		forb
<i>Crucianella angustifolia</i> L. .	narrow leaved crosswort	forb	
✓ <i>Crupina vulgaris</i> Cass.	common crupina	forb	Noxious
<i>Crypsis alopecuroides</i> (Piller & Mitterp.) Schrader	fox crypsis		. graminoid
<i>Cryptomeria japonica</i> (L.F.) D. Don.	Japanese cedar	tree	
var. <i>sinensis</i> Siebold. & Zucc.			
<i>Cucumis anguria</i> L.	west Indian gherkin	forb	
<i>Cucumis erinaceus</i> Hort.	west Indian gherkin	forb	
-> <i>Cucumis anguria</i> L.			
<i>Cucumis grossulariiformis</i> Hort.	west Indian gherkin	f o r b	
-> <i>Cucumis anguria</i> L.			
<i>Cunninghamia lanceolata</i> (Lamb.) Hook.	China fir	tree	
<i>Cunninghamia sinensis</i> R. BR.	China fir	tree	
-> <i>Cunninghamia lanceolata</i> (Lamb.) Hook.			
<i>Cuphea hyssopifolia</i> HBK.	false heather	shrub	
<i>Cupressus pisifera</i> (Siebold. & Zucc.) C. Koch.	sawara cypress		tree
-> <i>Chamaecyparis pisifera</i> (Siebold. & Zucc.) Endl.			
<i>Cupressus sempervirens</i> L.	Italian cypress	tree	
<i>Cuscuta approximata</i> Bab.	clustered dodder	forb	Noxious
<i>Cuscuta epithymum</i> Murr.	clover dodder	forb	
<i>Cuscuta planiflora</i> Tenore	smallseed dodder	forb	
<i>Cuscuta</i> spp. L.	dodder	forb	Noxious
<i>Cydonia sinensis</i> Thouin	quince	shrub	

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Cymbalaria muralis E. Mey & Scherb.	Kenilworth ivy	forb	
Cynara cardunculus L.	cardo	forb	
Cynara scolymus L.	artichoke	forb	
Cynodon dactylon (L.) Pers.	bermudagrass	graminoid	
Cynoglossum officinale L.	houndstongue	forb	Noxious
Cynosurus cristatus L.	crested dogtailgrass	graminoid	
Cyperus esculentus L.	yellow nutsedge	graminoid	Noxious
Cytisus albus (Lam.) Link, not Hacq.	White Spanish broom	shrub	
->Cytisus multiflorus (L'her. ex Ait.) Sweet.			
Cytisus monspessulanus L.	French broom	forb	Noxious
Cytisus multiflorus (L'her. ex Ait.) Sweet.	white Spanish broom	shrub	
Cytisus scoparius (L.) Link	scotch broom	shrub	Noxious
Dactylis glomerata L.	orchardgrass	graminoid	
Daphne cneorum L.	garland flower	shrub	
Daphne laureola L.	spurge laurel	shrub	
Daphne mezereum L.	February daphne	shrub	
Daphne x burkwoodii Turrill.		shrub	
Daucus carota L.	wild carrot	forb	Noxious
Delphinium ajacis L.	rocket larkspur	forb	
Descurainia sophia (L.) Webb	flixweed	forb	
Deutzia fortunei Carriere		shrub	
->Deutzia scabra Eastw.			
Deutzia scabra Eastw.		shrub	
Deutzia sieboldiana Maxim.		shrub	
->Deutzia scabra Eastw.			
Deutzia sieboldiana Maxim.		shrub	
var. diplyana C.K. Schneid	Deutzia, scabra Eastw.		
Dianthus armeria L.	deptford pink	forb	
Dianthus barbatus L.	sweet William	forb	
Dianthus deltoides L.	maiden pink	forb	
Diervilla lonicera P. Mill	bush honeysuckle	shrub	
Digitalis purpurea L.	foxglove	forb	
Digitaria ischaemum (Schreb.) Schreb.	smooth crabgrass	graminoid	
Digitaria sanguinalis (L.) Scop.	large crabgrass	graminoid	
Dioscorea batatas Decene.	Chinese yam	forb	
Diplotaxis muralis (L.) DC.	sand rocket	forb	
Dipsacus fullonum L.	common teasel	forb	
Dipsacus sylvestris Huds.	common teasel	forb	
->Dipsacus fullonum L.			
Doronicum plantagineum L.	leopards bane	forb	
Draba brachycarpa Nutt.	shortpod whitlow grass	forb	
Draba verna L.	spring whitlow grass	forb	
var. boerhaavii Van Hall			
var. verna			
Dracocephalum thymiflorum L.	thyme leaved dragonhead	forb	
Dracunculus vulgaris Schott.		forb	
Echinops exaltatus Schrad.	globe thistle	forb	
Echinops ritro L.	small globe thistle	forb	
var. tenuifolius DC.			
Echinops ruthenicus M. Bieb.	globe thistle	forb	
Echinops sphaerocephalus L.	great globethistle	forb	
Echium vulgare L.	blueweed	forb	Noxious
Edwardii tedi elliman	tedweed	tree	
Egeria densa Planch.	Brazilian elodea	forb	Noxious
->Elodea densa Casp. (Planch)			
Eichhornia azurea (Swartz) Kunth.	peacock hyacinth	forb	
Elaeagnus angustifolia L.	Russian olive	tree	

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<i>Elaeagnus edulis</i> Carriere	cherry eleagnus	shrub	
-> <i>Elaeagnus</i> multiflora Thunb.			
<i>Elaeagnus longipes</i> A. Gray.	cherry eleagnus	shrub	
-> <i>Elaeagnus</i> multiflora Thunb.			
<i>Elaeagnus</i> multiflora Thunb.	cherry eleagnus	s h r u b	
<i>Elaeagnus umbellata</i> Thunb.	autumn olive	tree	
<i>Eleocharis ovata</i> (Roth.) Roemer & Schultes		forb	
<i>Eleusine indica</i> (L.) Gaertn.	goosegrass	graminoid	
<i>Elodea canadensis</i> Hort ex L.H.	Bailey Brazillian elodea	forb	Noxious
var. <i>gigantea</i>			
<i>Elodea densa</i> Casp. (Planch)	Brazillian elodea	forb	Noxious
<i>Elsholtzia ciliata</i> (Thunb.) Hyl.	crested elsholtzia	forb	
<i>Elsholtzia cristata</i> Willd.	crested elsholtzia	forb	
-> <i>Elsholtzia</i> ciliata (Thunb.) Hyl.			
<i>Elymus caput-</i> medusae L.	medusahead	graminoid	Noxious
<i>Elymus giganteus</i> Vahl. Volga	wild rye	graminoid	
-> <i>Elymus</i> racemosa Lam.			
<i>Elymus hispidus</i> (Opiz) Melderis	intermediate wheatgrass	graminoid	
-> <i>Agropyron</i> intermedium (Host) Beauv.			
<i>Elymus junceus</i> Fisch.	Russian wildrye	graminoid	
<i>Elymus mollis</i> (Trin.) Hara.		graminoid	
<i>Elymus pungens</i> (Pers.) Meldaris		forb	
<i>Elymus racemosa</i> Lam. Volga	wild rye	graminoid	
<i>Elymus repens</i> (L.) Gould	quackgrass	graminoid	Noxious
-> <i>Agropyron repens</i> (L.) Beauv.			
<i>Elymus varnensis</i> (Vel.) Runem.	tall wheatgrass	graminoid	
-> <i>Agropyron</i> elongatum (Host) Beauv.			
<i>Elytrigia intermedia</i> (Host) Nevski	intermediate wheatgrass	graminoid	
-> <i>Agropyron</i> intermedium (Host) Beauv.			
<i>Elytrigia pontica</i> (Podp.) Holub	tall wheatgrass	graminoid	
-> <i>Agropyron</i> elongatum (Host) Beauv.			
<i>Elytrigia repens</i> (L.) Desv. ex Nevski	quackgrass	graminoid	Noxious
-> <i>Agropyron repens</i> (L.) Beauv.			
<i>Epipactis helleborine</i> (L.) Craptz	helleborine	forb	
<i>Eragrostis cilianensis</i> (All.) Mosher	stinkgrass	graminoid	
<i>Eragrostis curvula</i> (Schr.) Nees.	Weeping Love Grass	graminoid	
<i>Eragrostis minor</i> Host	little lovegrass	graminoid	
<i>Eragrostis perplexa</i> Harvey	Indian lovegrass	graminoid	
<i>Eragrostis pilosa</i> (L.) Beauv.	Indian lovegrass	graminoid	
var. <i>perplexa</i> (Harvey) S. D. Koch.			
<i>Eremopyrum triticeum</i> (Gaertn.) Nevski	annual wheatgrass	graminoid	
-> <i>Agropyron</i> triticeum Gaertn.			
<i>Eremurus x warei</i>		forb	
<i>Erodium cicutarium</i> (L.) L'Her.	redstem filaree	forb	
<i>Erodium moschatum</i> (L.) L'Her.	white stemmed filaree	forb	
<i>Erophila verna</i> (L.) Chev.	spring whitlowgrass	forb	
-> <i>Draba verna</i> L.			
<i>Eruca sativa</i> Gars.	garden rocket	forb	Noxious
<i>Eruca vesicaria</i> (L.) Cav.	garden rocket	forb	Noxious
-> <i>Eruca sativa</i> Gars.			
<i>Erucastrum gallicum</i> (Willd.) Schulz.	dog mustard	forb	
<i>Erysimum repandum</i> L.	bushy wallflower	forb	
<i>Escallonia punctata</i> D C .		shrub	
-> <i>Escallonia</i> rubra (Ruiz. & Pav.) Pers.			
<i>Escallonia rubra</i> (Ruiz. & Pav.) Pers.		shrub	
var. <i>glabriuscula</i> Hook. & Arn. <i>Escallonia rubra</i> (Ruiz. & Pav.) Pers.			
var. <i>pygmaea</i> Bean. <i>Escallonia rubra</i> (Ruiz. & Pav.) Pers.			

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Euclidium syriacum (L.) R. Br.	syrian mustard	forb	
Euonymus alata (Thunb.) Siebold.	winged spindle tree	tree	
Euonymus europaea L.	European spindle tree	tree	
Euonymus fortunei (Turcz.) Hand.- Mazz.		shrub	
form <i>carrierei</i>			
form <i>colorata</i>			
form <i>gracilis</i>			
form <i>kewensis</i>			
form <i>minima</i>			
var. <i>acuta</i>			
- var. <i>radicans</i> (Siebold ex Miq.) Rehd.			
var. <i>vegata</i> (Rehd.) Rehd.			
Euonymus nana Bieb		tree	
Euphorbia agraria Bieb.	leafy spurge	forb	
Euphorbia cyparissias L.	cypress spurge	forb	
Euphorbia epichymoides L.		forb	
— Euphorbia esula L.	leafy spurge	forb	Noxious
Euphorbia helioscopia L.	sun spurge	forb	
Euphorbia maculosa L.		forb	
Euphorbia myrsinites L.		forb	
Euphorbia peplus L.	petty spurge	forb	
Euphorbia podperae Croizat	leafy spurge	forb	
-> Euphorbia x pseudovirgata (Schur.) Soo			
Euphorbia polychroma A. Kern.		forb	
-> Euphorbia epichymoides L.			
Euphorbia pulcherima Willd. ex Hotzsch.	poinsetta	forb	
Euphorbia x pseudovirgata (Schur) Soo	hybrid leafy spurge	forb	
Fagopyrum esculentum Moench	buckwheat	forb	
Fagus sylvatica L.	European beech	tree	
Fatsia japonica (Thunb.) Decne. & Planch.	Japanese fatsia		tree
Festuca arundinacea Schreb.	tall fescue	graminoid	
Festuca bromoides L.	barren fescue	graminoid	
Festuca elatior L.	meadow fescue	graminoid	
-> Festuca pratensis Huds.			
Festuca pratensis Huds.	meadow fescue	graminoid	
Festuca rubra L.	red fescue	graminoid	
var. <i>prolifera</i> Piper			
var. <i>rubra</i>			
Filaginella uliginosum (L.) Opiz	marsh cudweed	forb	
-> Gnaphalium uiginosum L.			
Filago arvensis L.	field filago	forb	
Filipendula hexapetala Gilib.	dropwort	forb	
-> Filipendula vulgaris Moench.,			
Filipendula vulgaris Moench.	dropwort	forb	
Fluminea festucacea A. S. Hitchc.	sprangletop	graminoid	
-> Scolochloa festucacea (Willd.) Link			
Foeniculum vulgare Mill.	fennel	forb	
spp. <i>vulgare</i>			
var. <i>azoricum</i> (Mill.) Thell.			
var. <i>dulce</i> Batt. & Trab.			
Forsythia suspensa (Thunb.) Vahl.	golden bells	shrub	
Fritillaria imperialis L.	crown imperial	forb	
Fumaria officinalis L.	fumitory	forb	
Fumaria parviflora Lam..	fumitory	forb	
Fumaria vaillantii Lois	common fumitory	forb	
-> Fumaria officinalis L.			
Galega officinalis L.	goat's rue	forb	

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<i>Galeopsis bifida</i> Boenn.	common hemp nettle	forb	
-> <i>Galeopsis tetrahit</i> L.			
<i>Galeopsis tetrahit</i> L.	common hemp nettle	forb	
var. <i>tetrahit</i>			
<i>Galinsoga ciliata</i> (Raf.) Blake	hairy galinsoga	forb	
-> <i>Galinsoga quadriradiata</i> R. & P.			
<i>Galinsoga parviflora</i> Cav.	smallflower galinsoga	forb	
<i>Galinsoga quadriradiata</i> R. & P.	fringed quickweed	forb	
<i>Galium humifusum</i> Bieb.	bedstraw	forb	
<i>Galium mollugo</i> L.	smooth bedstraw	forb	
<i>Galium palustre</i> L.	marsh bedstraw	forb	
<i>Galium pedemontanum</i> (Bellardi) All.		forb	
<i>Galium verum</i> L.	yellow bedstraw	forb	
<i>Geocaulon linophyllum</i> L.	flaxleaf	forb	
-> <i>Thesium linophyllum</i> L.			
<i>Geranium molle</i> L.	dovefoot geranium	forb	
<i>Geranium pusillum</i> L.	smallflower geranium	forb	
<i>Geranium robertianum</i> L.	herb robert	forb	
<i>Geranium sanguineum</i> L.		forb	
<i>Geum urbanum</i> L.		forb	
<i>Ginkgo biloba</i> L.	maidenhair tree	t r e e	
<i>Glaucium corniculatum</i> (L.) J.H. Rudolph	red horn poppy		f o r b
<i>Glecoma hederacea</i> L.	ground ivy	forb	
<i>Glyceria canadensis</i> (Michx.) Trin.		graminoid	
<i>Gnaphalium uliginosum</i> L.	low cudweed	forb	
<i>Gypsophila acutifolia</i> Steven ex K. Spreng.		f o r b	
<i>Gypsophila muralis</i> L.	baby's breath	forb	
<i>Gypsophila paniculata</i> L.	babysbreath	forb	Noxious
<i>Halogeton glomeratus</i> Meyer.	halogeton	forb	Noxious
<i>Hedera helix</i> L.	English ivy	forb	
var. <i>helix</i>			
var. <i>hibernica</i> (Kirchn.) H.Jacq.			
<i>Heleochoia alopecuroides</i> (Pill. & Mittep.) Host.	heleochoia		graminoid
-> <i>Crypsis alopecuroides</i> (Piller & Mitterp.) Schrade			
<i>Helleborus niger</i> L.	Christmas rose	f o r b	
<i>Hemerocallis fulva</i> L.	tawny daylily	f o r b	
<i>Heracleum mantegazzianum</i> Somm. & Levier	giant hogweed	forb	Noxious
<i>Herniaria cineria</i> DC.		forb	
<i>Hesperis matronalis</i> L.	damesrocket	forb	
<i>Hibiscus acerfolius</i> Salsib. not DC.	rose of sharon	shrub	
-> <i>Hibiscus syriacus</i> L.			
<i>Hibiscus chinensis</i> Hort. in part not Roxb. or DC.	Chinese hibiscus	shrub	
-> <i>Hibiscus rosa-sinensis</i> L.			
<i>Hibiscus fulgens</i> Hort.	Chinese hibiscus	shrub	
-> <i>Hibiscus rosa-sinensis</i> L.			
<i>Hibiscus rosa-sinensis</i> L.	Chinese hibiscus	shrub	
<i>Hibiscus syriacus</i> L.	rose of sharon	shrub	
<i>Hibiscus trionum</i> L.	venice mallow	forb	Noxious
<i>Hieracium aurantiacum</i> L.	orange hawkweed	forb	Noxious
<i>Hieracium pilosella</i> L.	mouse ear hawkweed	forb	Noxious
<i>Hieracium piloselloides</i> Vill.	kingdevil hawkweed	forb	
<i>Hieracium pratense</i> L.	yellow hawkweed	forb	Noxious
<i>Holcus lanatus</i> L.	common velvetgrass	graminoid	
<i>Holcus mollis</i> L.	German velvetgrass	graminoid	
<i>Holosteum umbellatum</i> L.	umbrella spurry	f o r b	
<i>Hordeum distichon</i> L.		graminoid	
<i>Hordeum geniculatum</i> All.	Mediterranean barley	graminoid	

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<i>Hordeum hystrix</i> Roth	Mediterranean barley	graminoid	
-> <i>Hordeum geniculatum</i> All.			
<i>Hordeum leporinum</i> Link	hare barley	graminoid	
<i>Hordeum murinum</i> L.	hare barley	graminoid	
<i>Hordeum vulgare</i> L.	barley	graminoid	
<i>Humulus lupulus</i> L.	common hop	forb	
<i>var. lupulus</i>			
<i>Hygrophila polysperma</i> (Roxb.) T. Anderson		forb	
<i>Hyoscyamus niger</i> L.	black henbane	f o r b	Noxious
<i>Hypericum androsaemum</i> L.	tutsan	shrub	
<i>Hypericum perforatum</i> L.	common St. Johns wort	f o r b	Noxious
<i>Hypochaeris radicata</i> L.	spotted cats ear	forb	Noxious
<i>Hyssopus officinalis</i> L.	hyssop	forb	
<i>Iberis amara</i> L.	candytuft	forb	
<i>Iberis umbellata</i> L.	globe candytuft	forb	
<i>Ilex aquifolium</i> L.	English holly	tree	
<i>Impatiens balfouri</i> Hook.		forb	
<i>Impatiens glandulifera</i> Royle		forb	
<i>Impatiens noli-tangere</i> L.	touch me not	forb	
<i>Imperata brasiliensis</i> Trin		graminoid	
<i>Ipomoea aquatica</i> Forssk.	water spinach	forb	
<i>Ipomoea purpurea</i> (L.) Roth	tall morningglory	forb	
<i>Iris pseudacorus</i> L.	yellowflag iris	forb	
<i>Isatis tinctoria</i> L.	dyer's woad	forb	Noxious
<i>Ischaemum rugosum</i> Salisb.	wrinkle duck beak	graminoid	
<i>Isnardia palustris</i> (L.) Elliott	water purslane	forb	
-> <i>Ludwigia palustris</i> (L.) Elliott			
<i>Jasione jankae</i> Neillr.		forb	
-> <i>Jasione montana</i> L.			
<i>Jasione montana</i> L.		forb	
<i>Juglans ailanthifolia</i> Carriere	Japanese walnut	tree	
<i>Juglans sieboldiana</i> Maxim. not Gopp.	Japanese walnut	tree	
-> <i>Juglans ailanthifolia</i> Carriere			
<i>Juncus compressus</i> Jacq.	compressed rush	graminoid	
<i>Juncus planifolius</i> R. Br.		forb	
<i>Kerria japonica</i> (L.) DC.	Japanese rose	shrub	
<i>Kickxia elatine</i> (L.) Dumart	sharp point fluvellin	f o r b	
<i>Kickxia spuria</i> (L.) Dumort.	forb		
<i>Knautia arvensis</i> (L.) Coult.	bluebuttons	forb	
<i>Kochia scoparia</i> (L.) Schrad.	k o c h i a	forb	Noxious
<i>Koeleruteria paniculata</i> Laxm.	varnish tree	tree	
<i>var. apiculata</i> (Rehd. & EH. Wils) Rehd.			
<i>Kolkwitzia amabilis</i> Graebn.	beautybush	shrub	
<i>Laburnum anagyroides</i> Medic.	golden chain	t r e e	
<i>Laburnum vulgares</i> Brecht & J. Presl.	golden chain	tree	
-> <i>Laburnum anagyroides</i> Medic.			
<i>Laburnum x watereri</i> (Kirchen.) Dipp.	golden chain tree	tree	
<i>Lactuca saligna</i> L.	willowleaf lettuce	f o r b	
<i>Lactuca serriola</i> L.	prickly lettuce	forb	
<i>Lagarosiphon 'major'</i> (Ridley) Moss.		forb	
<i>Lamium amplexicaule</i> L.	henbit	forb	
<i>Lamium hybridum</i> Vill.	dead-nettle	forb	Noxious
<i>Lamium maculatum</i> L.	spotted deadnettle	f o r b	
<i>Lamium purpureum</i> L.	purple deadnettle	f o r b	
<i>Lappula echinata</i> Gilib.	European sticktight	forb	
<i>Lappula myosotis</i> Wolf	bristly stickseed	f o r b	
-> <i>Lappula echinata</i> Gilib.			

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<i>Lappula squarrosa</i> (Retz.) Dumort.	bristly stickseed	forb	
-> <i>Lappula echinata</i> Gilib.			
<i>Lapsana communis</i> L.	nipplewort	forb	
<i>Lathyrus latifolius</i> L.	everlasting peavine	forb	
<i>Lathyrus pratensis</i> L.	meadow peavine	forb	
<i>Lathyrus sphaericus</i> Retz.	grass peavine	forb	
<i>Lathyrus sylvestris</i> L.	flat peavine	forb	
<i>Lathyrus tuberosus</i> L.	earth nut peavine	forb	
<i>Laurocerasus lusitanica</i> (L.) M.J. Roem.	Portugal laurel	tree	
-> <i>Prunus lusitanica</i> L.			
<i>Laurocerasus officinalis</i> M.J. Roem.	chery laurel	tree	
-> <i>Prunus laurocerasus</i> L.			
<i>Lavatera arborea</i> L.	tree mallow	shrub	
<i>Leontodon autumnalis</i> L.	hawkbit	forb	
<i>Leontodon nudicaulis</i> (L.) Merat.	hawkbit	f o r b	
<i>Leonurus cardiaca</i> L.	motherwort	forb	
<i>Lepidium campestre</i> (L.) R. Br.	field pepperweed	forb	
<i>Lepidium latifolium</i> L.	perennial pepperweed	forb	Noxious
<i>Lepidium perfoliatum</i> L.	clasping pepperweed	foib	
<i>Lepidium ruderales</i> L.	narrowleaf pepperweed	f o r b	
<i>Lepidium sativum</i> L.	garden cress	forb	
<i>Leptochloa chinensis</i> (L.) Nees.	red sprangle top	graminoid	
<i>Leucanthemum vulgare</i> Lam.	oxeye daisy	forb	Noxious
-> <i>Chrysanthemum leucanthemum</i> L.			
<i>Ligustrum amurense</i> Carriere	a m u r p r i v e t	'shrub	
<i>Ligustrum indicum</i> (Lour.) Merrill		shrub	
<i>Ligustrum japonicum</i> Thunb.	Japanese Privet	shrub'	
var. <i>rotundifolium</i> Blume			
<i>Ligustrum kellermannii</i> Van Houtte	Japanese Privet	shrub	
-> <i>Ligustrum japonicum</i> Thunb.			
<i>Ligustrum nepalense</i> Wallich.		shrub	
-> <i>Ligustrum indicum</i> (Lour.) Merrill			
<i>Ligustrum sinense</i> Lour.		shrub	
var. <i>stauntonii</i> (A.DC.) Rehd.			
<i>Ligustrum vulgare</i> L.	common privet	s h r u b	
<i>Limnophila sessiliflora</i> Blume.		forb	
<i>Linaria dalmatica</i> (L.) Mill.	dalmatian toadflax	forb	Noxious
<i>Linaria genistifolia</i> (L.) Mill.	dalmatian toadflax	forb	Noxious
-> <i>Linaria dalmatica</i> (L.) Mill.			
<i>Linaria vulgaris</i> Hill	yellow toadflax	f o r b	Noxious
<i>Linum angustifolium</i> Huds.		forb	
-> <i>Linum bienne</i> Mill.			
<i>Linum bienne</i> Mill.		forb	
<i>Linum usitatissimum</i> L.	cultivated flax	forb	
<i>Lithospermum arvense</i> L.	corn gromwell	forb	
<i>Lobularia maritima</i> (L.) Desv.	sweet alyssum	forb	
<i>Logfia arvensis</i> (L.) Holub	field filago	forb	
-> <i>Filago arvensis</i> L.			
<i>Lolium multiflorum</i> Lam.	Italian ryegrass	graminoid	
<i>Lolium perenne</i> L.	perenne ryegrass	graminoid	
var. <i>aristatum</i> Willd.			
var. <i>perenne</i>			
<i>Lolium persicum</i> Boiss. & Hohenack	Persian darnel	graminoid	
<i>Lolium temulentum</i> L.	poison ryegrass	graminoid	
<i>Lonicera etrusca</i> Santi.		shrub	
<i>Lonicera nitida</i> E.H. Wils.		shrub	

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Lonicera periclymenum L. var. <i>belgica</i> Ait. var. <i>serotina</i> Ait.	woodbine shrub	shrub	
<i>Lonicera pileata</i> E.H. Wils. form <i>yunnanensis</i> (Franch.) Rehd. -> <i>Lonicera nitida</i> E.H. Wils.		shrub	
· <i>Lonicera tartarica</i> L.	Tartarian honeysuckle	shrub	
<i>Lonicera tatarica</i> L.	Tatarian honeysuckle	shrub	
<i>Lotus corniculatus</i> L.	birdsfoot trefoil	forb	
<i>Lotus pedunculatus</i> Cav.		forb	
<i>Lotus tetragonolobus</i> L.	wingedpea	forb	
<i>Lotus uliginosus</i> Schkuhr. -> <i>Lotus pedunculatus</i> Cav.		forb	
<i>Ludwigia palustris</i> (L.) Elliott	waterpurslane	forb	
<i>Lunaria annua</i> L.	honesty	forb	
<i>Lunaria biennis</i> Moench. -> <i>Lunaria annua</i> L.	honesty	forb	
<i>Lychnis alba</i> Mill.	white campion	forb	Noxious
<i>Lychnis chalconica</i> L.	maltese cross	forb	
<i>Lychnis coronaria</i> (L.) Desr.	rose campion	forb	
<i>Lychnis dioica</i> (L.) Clairv.	red campion	forb	
<i>Lychnis flos-cuculi</i> L.	meadow campion	forb	
<i>Lychnis silvestris</i> Schkuhr -> <i>Lychnis dioica</i> (L.) Clairv.	red campion	forb	
<i>Lychnis x arkwrightii</i> Heydt.		forb	
<i>Lycium barbarum</i> L. -> <i>Lycium halimifolium</i> Mill.	matrimony vine	shrub	
<i>Lycium halimifolium</i> Mill.	matrimonyvine	s h r u b	
· <i>Lycopersicon esculentum</i> Mill. -> <i>Lycopersicon lycopersicum</i> (L.) Karat ex Farw.	tomato	forb	
<i>Lycopersicon lycopersicum</i> (L.) Karat ex Farw.	tomato	forb	
<i>Lycopersicon lycopersicum</i> Mill. var. <i>cerasiforme</i> (Dunal) Alef. -> <i>Lycopersicon lycopersicum</i> (L.) Karat ex Farw.	cherry tomato	forb	
<i>Lycopersicon lycopersicum</i> Mill. var. <i>pyriforme</i> (Dunal) Alef. -> <i>Lycopersicon lycopersicum</i> (L.) Karat ex Farw.	pear tomato	forb	
<i>Lycopsis arvensis</i> L. -> <i>Anchusa arvensis</i> (L.) Bieb.	small bugloss	forb	
<i>Lysimachia clethroides</i> Duby.	gooseneck loosestrife	forb	
<i>Lysimachia punctata</i> L.	dotted loosestrife	forb	
<i>Lysimachia terrestris</i> (L.) B.S.P.	swampcandle	forb	
<i>Lysimachia vulgaris</i> L.	garden loosestrife	forb	Noxious
<i>Lythrum hyssopifolium</i> L.	hyssop loosestrife	forb	
· <i>Lythrum salicaria</i> L.	purple loosestrife	forb	Noxious
<i>Lythrum virgatum</i> L.		forb	Noxious
<i>Maclura pomifera</i> (Raf.) C.K. Schneid.	osage orange	tree	
<i>Majorana hortensis</i> Moench. -> <i>Origanum majonana</i> L.	marjoram	forb	
<i>Malcolmia africana</i> (L.) R. Br.	malcolm stock	forb	
· <i>Malus floribunda</i> Siebold ex VanHoutte.	showy crab apple	tree	
<i>Malus palcherrima</i> (Asch. & Graebn.) K.E. Boynt.	showy crab apple	tree	
-> <i>Malus floribunda</i> Siebold ex VanHoutte.			
<i>Malus sylvestris</i> (L.) P. Mill. -> <i>Pyrus malus</i> L.	common apple	tree	
<i>Malva moschata</i> L.	musk mallow	forb	
<i>Malva neglecta</i> Wallr.	common mallow	forb	

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Malva parviflora L.	little mallow	forb	
Malva rotundifolia L.	common mallow	forb	
Malva sylvestris L.	high mallow,	forb	
Malva verticillata L.	clustered mallow.	forb	
Marrubium vulgare L.	white horehound	forb	
<i>Matricaria capensis</i> Hort. not L.	feverfew	f o r b	
-> <i>Chrysanthemum parthenium</i> (L.) Bernh.			
<i>Matricaria chamomilla</i> L.	wild chamomile	forb	
<i>Matricaria eximia</i> Hort.	feverfew	forb	
-> <i>Chrysanthemum parthenium</i> (L.) Bernh.			
<i>Matricaria inodora</i> L.	scentless chamomile	forb	Noxious
-> <i>Matricaria maritima</i> L.			
<i>Matricaria maritima</i> L.	false chamomile	forb	Noxious
<i>Matricaria matricarioides</i> (Less.) Porter	pineapple weed	forb	
<i>Matricaria parthenoides</i> Hort.	feverfew	forb	
-> <i>Chrysanthemum parthenium</i> (L.) Bernh.			
<i>Matricaria perforata</i> Merat	scentless chamomile	forb	Noxious
-> <i>Matricaria maritima</i> L.			
<i>Medicago falcata</i> L.	sickle medic	forb	
<i>Medicago hispida</i> Gaertn.	California burclover	forb	
<i>Medicago lupulina</i> L.	black medic	forb	
<i>Medicago polymorpha</i> L.	California burclover	forb	
-> <i>Medicago hispida</i> Gaertn.			
<i>Medicago sativa</i> L.	alfalfa	forb	
<i>Medicago arabica</i> (L.) Hudson	spotted medic	f o r b	
<i>Medicago arabica</i> (L.) Hudson	spotted medic	forb	
ssp. <i>inermis</i> Ricker			
-> <i>Medicago arabica</i> (L.) Hudson			
<i>Melastoma malabathricum</i> L.		forb	
<i>Melilotus alba</i> Medic.	white sweetclover	forb	
<i>Melilotus indica</i> All.	Indian sweetclover	forb	
<i>Melilotus officinalis</i> (L.) Pall.	yellow sweetclover	forb	
<i>Melissa officinalis</i> L.	lemon balm	f o r b	
<i>Mentha piperita</i> L.	peppermint	f o r b	
-> <i>Mentha x piperita</i> L.			
<i>Mentha pulegium</i> L.	pennyroyal	forb	
var. <i>gibraltrica</i> (Willd.) Batl. & Huds.			
<i>Mentha rotundifolia</i> of auth. not (L.) Huds.	roundleaved mint		forb
-> <i>Mentha suaveolens</i> J.F. Ehrh.			
<i>Mentha spicata</i> L.	spearmint	f o r b	
<i>Mentha'suaveolens</i> J.F. Ehrh.	apple mint	forb	
<i>Mentha x piperita</i> L.	peppermint	forb	
<i>Milium vernale</i> Bieb.		graminoid	Noxious
<i>Milium vernale</i> Bieb.		graminoid	Noxious
ssp. <i>montianum</i> (Parl.) Jahandiez. & Maire.			
<i>Mirabilis jalapa</i> L.	common four o'clock	forb	
<i>Mirabilis uniflora</i> Schrank.	four o'clock	forb	
-> <i>Mirabilis jalapa</i> L.			
<i>Mollugo verticillata</i> L.	carpetweed	forb	
<i>Molucceila laevis</i> L.	bells of Ireland	forb	
<i>Monochoria vaginalis</i> (Brum.f.) Kunth.		forb	
<i>Monterbretia pottsii</i> (Bak.) Bak.	monterbretia	f o r b	
-> <i>Crocasmia pottsii</i> (Bak.) N.E. Br.			
<i>Morus alba</i> L.	white mulberry	t r e e	
<i>Muscari comosum</i> (L.) Mill.	tassel hyacinth	forb	
<i>Myosotis arvensis</i> (L.) Hill	field forget me not	forb	
<i>Myosotis discolor</i> Pers.	yellow and blue forget me-not		forb

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Myosotis micrantha Pall.	blue scorpion grass	forb	
Myosotis scorpioides L.	true forget me not	forb	
<i>Myriophyllum aquaticum</i> (Vell.) Verdc.	parrotfeather	forb	Noxious
-> <i>Myriophyllum brasiliense</i> Camb.			
<i>Myriophyllum brasiliense</i> Camb.	parrotfeather	f o r b	Noxious
<i>Myriophyllum spicatum</i> L.	spiked water milfoil	forb	Noxious
var. <i>spicatum</i>			
<i>Myriophyllum verticillatum</i> L.	whorled watermilfoil	f o r b	-Noxious
<i>Najas marina</i> L.	hollyleaf naiad	forb	
<i>Nardus stricta</i> L.	moor matgrass	graminoid	Noxious
<i>Nasturtium officinale</i> R. Br.	watercress	forb	
<i>Nepeta cataria</i> L.	catnip	forb	
<i>Nepeta hederacea</i> (L.) Trevisan	ground ivy	forb	
-> <i>Glechoma hederacea</i> L.			
<i>Nepeta pseudomassinii</i> Floto.		forb	
-> <i>Nepeta x faassenii</i> Bergmans ex Stearn.			
<i>Nepeta x faassenii</i> Bergman; ex Stearn.		forb	
<i>Neslia paniculata</i> (L.) Desv.	ball mustard	forb	
<i>Nicotiana glauca</i> R.C. Grah.	tree tobacco	forb	
<i>Nigella damascena</i> L.	love in a mist	forb	
<i>Nymphaea odorata</i> Ait.	fragrant waterlily	forb	
<i>Odontites verna</i> (Bellardi) Dumort.		forb	
<i>Oenothera perennis</i> L.	perennial sundrops	forb	
<i>Oenothera pilosella</i> L.	sweet marjoram	forb	
<i>Onobrychis viciifolia</i> Scop.	saintfoin	f o r b	
<i>Onopordum acanthium</i> L.	Scotch thistle	forb	Noxious
<i>Origanum majorana</i> L.	sweet marjoram	forb	
<i>Origanum vulgare</i> L.	wild marjoram	forb	
<i>Omithogalum caudatum</i> Ait.	sea onion	forb	
<i>Omithogalum umbellatum</i> L.	star of bethlehem	forb	
<i>Orobancha minor</i> Sm.	small broomrape	forb	
<i>Oryza rufipogon</i> Griffith		graminoid	
<i>Otteia alismoides</i> (L.) Pers.		f o r b	
<i>Oxalis corniculata</i> L.	creeping woodsorrel	forb	
<i>Oxalis rubra</i> St. Hil.		forb	
<i>Panicum miliaceum</i> L.	wild proso millet	graminoid	Noxious
<i>Papaver argemone</i> L.	pinnate poppy	forb	
<i>Papaver rhoeas</i> L.	corn POPPY	forb	
<i>Papaver setigerum</i> L.	opium POPPY	f o r b	
-> <i>Papaver somniferum</i> L.			
<i>Papaver somniferum</i> L.	opium POPPY	forb	
<i>Papaver somniferum</i> L.	opium POPPY	forb	
spp. <i>setigerum</i> (DC.) Curb.			
-> <i>Papaver somniferum</i> L.			
<i>Parentucellia viscosa</i> (L.) Car.	parentucellia	f o r b	
<i>Paspalum scrobiculatum</i> L.	kodo millet	graminoid	
<i>Pastinaca sativa</i> L.	wild parsnip	f o r b	
<i>Paulownia tomentosa</i> (Thunb.) Steud.	royal paulownia	tree	
<i>Peganum harmala</i> L.	peganum	forb	Noxious
<i>Pennisetum clandestinum</i> Hochst. ex Chiov.	kikuyu grass	graminoid	
<i>Pennisetum pedicellatum</i> Trin.		graminoid	
<i>Pennisetum setaceum</i> (Forssk.) Chiov.	crimson fountaingrass	graminoid	
<i>Pernettya mucronata</i> (L.F.) Gaud.-Beaup. ex K. Spring		shrub	
<i>Pernettya mucronata</i> (L.F.) Gaud.-Beaup. ex K. Spring		s h r u b	
var. <i>angustifolia</i> (Lindl.) Reiche			
-> <i>Pernettya mucronata</i> (L.F.) Gaud.-Beaup. ex K. Spring			

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<i>Pernettya rupicola</i> Phil.		shrub.	
-> <i>Pernettya mucronata</i> (L.F.) Gaud.-Beaup. ex K. Spring			
<i>Petasites japonicus</i> (Siebold.&Zucc.) Maxim.	fuki	forb	
<i>Petroselinum crispum</i> (Mill.) Nyman ex A.W. Hill.	parsley	forb	
<i>Petroselinum crispum</i> (Mill.) Nyman ex A.W. Hill.	parsley	forb	
var. <i>neapolitanum</i> Danert.			
-> <i>Petroselinum crispum</i> (Mill.) Nyman ex A.W. Hill.			
<i>Petroselinum crispum</i> (Mill.) Nyman ex A.W. Hill.	turnip rooted parsley	forb	
var. <i>tuberosum</i> (Benth.) Crov.			
-> <i>Petroselinum crispum</i> (Mill.) Nyman ex A.W. Hill.			
<i>Petroselinum hortense</i> Hoffm.	parsley	forb	
-> <i>Petroselinum crispum</i> (Mill.) Nyman ex A.W. Hill.			
<i>Petroselinum sativum</i> Hoffm.	parsley	forb	
-> <i>Petroselinum crispum</i> (Mill.) Nyman ex A.W. Hill.			
<i>Phalaris aquatica</i> L.	Harding Grass	graminoid	
<i>Phalaris arundinacea</i> L.	reed canarygrass	graminoid	
<i>Phalaris canariensis</i> L.	canary grass	graminoid	
<i>Phaseolus coccineus</i> L.	scarlet runner bean	forb	
<i>Phaseolus multiflorus</i> Lam.	scarlet runner bean	forb	
-> <i>Phaseolus coccineus</i> L.			
<i>Phaseolus vulgaris</i> L.	green bean	forb	
<i>Phleum pratense</i> L.	timothy	graminoid	
<i>Phlomis tuberosa</i> L.	Jerusalem sage	forb	
<i>Physalis edulis</i> Sims.	cape gooseberry	forb	
-> <i>Physalis peruviana</i> L.	I		
<i>Physalis peruviana</i> L.	cape gooseberry	forb	
<i>Picris echioides</i> L.	bristly oxtongue	forb	
<i>Picris hieracoides</i> L.	bitterweed	forb	Noxious
<i>Picris hieracoides</i> L.	kamchatka	forb	Noxious
ssp. <i>Kamtschatica</i> (Ledela.) Holt.			
-> <i>Picris hieracoides</i> L.			
- <i>Pieris japonica</i> (Thunb.) D. Don. ex G. Don.	lily of the valley bush	shrub	
<i>Pimpinella anisum</i> L.	common anise	forb	
<i>Pinus nigra</i> Arnold.	Austrian pine	tree	
<i>Pinus nigra</i> Arnold.	Austrian pine	tree	
ssp. <i>laricio</i> Maire			
-> <i>Pinus nigra</i> Arnold.			
<i>Pinus sylvestris</i> L.	scots pine	tree	
<i>Pinus sylvestris</i> L.	scots pine	tree	
var. <i>rigensis</i> Loud.			
-> <i>Pinus sylvestris</i> L.			
<i>Pinus thunbergiana</i> Franco	Japanese black pine	tree	
<i>Pinus thunbergii</i> Parl. 'not Lamb.	Japanese black pine	tree	
-> <i>Pinus thunbergiana</i> Franco			
<i>Pinus wallichiana</i> Jackson		tree	
<i>Plantago aristata</i> Michx.	bracted plantain	forb	
<i>Plantago lanceolata</i> L.	buckhorn plantain	forb	
<i>Plantago major</i> L.	common plantain	forb	
var. <i>major</i>			
var. <i>pilgeri</i> Domin			
<i>Poa annua</i> L.	annual bluegrass	graminoid	
<i>Poa bulbosa</i> L.	bulbous bluegrass	graminoid	
<i>Poa compressa</i> L.	Canada bluegrass	graminoid	
<i>Poa palustris</i> L.	fowl bluegrass	graminoid	
<i>Poa pratensis</i> L.	Kentucky bluegrass	graminoid	
<i>Poa trivialis</i> L.	roughstalk bluegrass	graminoid	

EXOTIC PLANT SPECIES OF THE COLUMBIA BASIN

<i>Poinsetta pulcherima</i> (Willd. ex Klotzsch) R.C. Grah.	poinsetta	forb	
-> <i>Euphorbia pulcherima</i> Willd. ex Hotzsch.			
<i>Polygonum aubertii</i> Litt.	China fleece vine	f o r b	
<i>Polygonum convolvulus</i> L.	wild buckwheat	forb	
<i>Polygonum cuspidatum</i> Siebold. & Zucc.	Japanese knotweed	foib	Noxious
<i>Polygonum hydropiper</i> L.	marshpepper 'smartweed	f o r b	
<i>Polygonum lapathifolium</i> L.	pale smartweed	forb	
<i>Polygonum neglectum</i> Bess.	prostrate- knotweed	forb	
<i>Polygonum orientale</i> L.	princess feather	forb	
<i>Polygonum persicaria</i> L.	ladysthumb	forb	
<i>Polygonum polystachyum</i> Wall.		shrub	
<i>Polygonum sachalinense</i> F. Schmidt ex Maxim.	sakhalin	knotweed	forb
<i>Polygonum scandens</i> L.	climbing false buckwheat	f o r b	
var. <i>dumetorum</i> (L.) Gl.			
<i>Polygonum spaethii</i> Dammer	prince's feather	f o r b	
-> <i>Polygonum orientale</i> L.			
<i>Polypogon monspeliensis</i> (L.) Desf.	rabbitfoot polypogon	graminoid	
<i>Poncirus trifoliata</i> (L.) Raf.	trifoliolate orange	tree	
<i>Populus alba</i> L.	white poplar	tree	
<i>Portulaca oleiacea</i> L.	common purslane	forb	
<i>Potamogeton crispus</i> L.	curlyleaf pondweed	forb	
<i>Potentilla argentea</i> L.	silvery cinquefoil	forb	
<i>Potentilla coccinea</i> Hoffmeist.		forb	
-> <i>Potentilla nepalensis</i> Hook.			
<i>Potentilla formosa</i> D.Don		forb	
-> <i>Potentilla nepalensis</i> Hook.			
<i>Potentilla nepalensis</i> Hook.		forb	
<i>Potentilla recta</i> L.	sulfur cinquefoil	forb	Noxious
<i>Primula' parryi</i> Gray	Parry's primrose	forb	
<i>Prosopis alapataco</i> Phil.	alapataco	shrub	
<i>Prosopis argentina</i> Burk.	algarobilla	shrub	
<i>Prosopis burkartii</i> Munoz		shrub	
<i>Prosopis caldenia</i> Burk.	calden	shrub	
<i>Prosopis calingastana</i> Burk.	cusqui	shrub	
<i>Prosopis campestris</i> Griseb	aigarrobillo	shrub	
<i>Prosopis castellanosi</i> Bruk.		shrub	
<i>Prosopis denudans</i> Benth.	algarrobo patagonica	shrub	
<i>Prosopis elata</i> Burk.	algarobito	shrub	
<i>Prosopis farcta</i> (Sol. ex Russ) MacBride	acatin	shrub	
<i>Prosopis ferox</i> Griesb	churqui	shrub	
<i>Prosopis fiebrigii</i> Harms.		shrub	
<i>Prosopis hassleri</i> Harms.	algarrobo	shrub	
<i>Prosopis humilis</i> Hook & Arn.	barba de tigre	shrub	
<i>Prosopis kuntzei</i> Harms	itin	shrub	
<i>Prosopis pallida</i> (Hmb ex Willd.) HBK		shrub	
<i>Prosopis rojasiana</i> Burk.		shrub	
<i>Prosopis ruizlealii</i> Burk.		shrub	
<i>Prosopis ruscifolia</i> Griesb	venal	shrub	
<i>Prosopis sericantha</i> Hook & Arn.	temoj	shrub	
<i>Prosopis torquata</i> (Laj.) D.C.	tintitaco	shrub	
<i>Prunella vulgaris</i> L.	self heal	forb	
var. <i>vulgaris</i>			
<i>Prunus armeniaca</i> L.	apricot	tree	
var. <i>mandshurica</i> Maixm.			
var. <i>siberica</i> (L.) C. Koch.			
<i>Prunus avium</i> L.	sweet cherry	shrub	
<i>Prunus cerasifera</i> J.F. Ehrh.	cherry plum	tree	

var. <i>devaricata</i> (Ledeb.) L.H.			
<i>Prunus cerasus</i> L.	sour cherry	tree	
<i>Prunus domestica</i> L.	garden plum	shrub	
<i>Prunus fruticosa</i> Pall.	European dwarf cherry	tree	
<i>Prunus glandulosa</i> Thunb.	flowering almond	tree	
<i>Prunus laurocerasus</i> L.	cherry laurel	tree	
<i>Prunus lusitanica</i> L.	Portugal laurel	tree	
<i>Prunus mahaleb</i> L.	mahaleb cherry	tree	
<i>Prunus myrablam</i> (L.) Loisel.	cherry plum	tree	
-> <i>Prunus cerasus</i> L.			
<i>Prunus padus</i> L.	bird cherry	tree	
<i>Prunus spinosa</i> L.	blackthorn	shrub	
<i>Prunus tomentosa</i> Thunb.	nanking cherry	tree	
var. <i>endotricha</i> Koehne.			
<i>Psathyrostachys juncea</i> (Fischer) Nevski	Russian wild Rye	'graminoid	
-> <i>Elymus junceus</i> Fisch.			
<i>Puccinellia distans</i> (L.) Parl.	weeping alkaligrass	graminoid	
<i>Pyrus calleryana</i> Decne.		tree	
<i>Pyrus communis</i> L.	pear	t r e e	
<i>Pyrus floribunda</i> Siebold	showy crab apple	tree	
-> <i>Malus floribunda</i> Siebold ex VanHoutte.			
<i>Pyrus malus</i> L.	common apple	tree	
<i>Ranunculus acris</i> L.	tall buttercup	forb	
<i>Ranunculus arvensis</i> L.	corn buttercup	forb	
<i>Ranunculus ficaria</i> L.	lesser ceiadine	forb	
<i>Ranunculus parviflorus</i> L.		forb	
<i>Ranunculus repens</i> L.	creeping buttercup	forb	
var. <i>pleniflorus</i> Fern.			
var. <i>repens</i>			
<i>Ranunculus testiculatus</i> Crantz	bur buttercup	forb	
<i>Raphanus raphanistrum</i> L.	wild radish	forb	
<i>Raphanus sativus</i> L.	radish	f o r b	
<i>Reseda lutea</i> L.	yellow mignonette	f o r b	
<i>Retinspora pisifera</i> Siebold. & Zucc.	sawara cypress	tree	
-> <i>Chamaecyparis pisifera</i> (Siebold. & Zucc.) Endl.			
<i>Rhamnus cathartica</i> L. European	buckthorn	shrub	
<i>Rhamnus davurica</i> Pall. Dahurian	buckthorn	s h r u b	
<i>Rheum rhabarbarum</i> L.	rhubarb	forb	
<i>Rhus cotinus</i> L.	smoke bush	shrub	
-> <i>Cotinus coggygria</i> Scop.			
<i>Rhus typhina</i> L.	staghorn sumac	shrub	
<i>Ribes rubrum</i> L.	cultivated red currant	s h r u b	
-> <i>Ribes sativum</i> (Reichb.) Syme			
<i>Ribes sativum</i> (Reichb.) Syme	cultivated red currant	shrub	
<i>Robinia pseudo-acacia</i> L.	black locust	tree	
<i>Rorippa armoracia</i> (L.) A. S. Hitchc.	horseradish	forb	
-> <i>Armoracia rusticana</i> Gaertn., B. Mey & Scherb			
<i>Rorippa austriaca</i> (Crantz) Bess.	Austrian fieldcress	forb	Noxious
<i>Rorippa nasturtium-aquaticum</i> (L.) Schinz & Thell.	watercress	forb	
-> <i>Nasturtium officinale</i> R. Br.			
<i>Rorippa sylvestris</i> (L.) Bess.	yellow fieldcress	forb	Noxious
<i>Rosa canina</i> L.	dog rose	shrub	
<i>Rottboellia cochinchinensis</i> (Loar.) W. Claton	Kelly grass	graminoid	
<i>Rottboellia exaltata</i> Linn.f.	itch grass	graminoid	
<i>Rubus discolor</i> Weihe & Nees	Himalaya blackberry	s h r u b	
<i>Rubus fruiticosus</i> L.	bramble	shrub	
<i>Rubus laciniatus</i> Willd.	cutleaf blackberry	shrub	

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Rumex acetosa L.	green sorrel	forb
Rumex acetosella L.	red sorrel	forb
Rumex crispus L.	curly dock	forb
Rumex domesticus Hartm.	longleaf dock	forb
<i>Rumex longifolius</i> D.C.	longleaf dock	forb
-> Rumex domesticus Hartm.		
Rumex obtusifolius L.	broadleaf dock	forb
Rumex patientia L.	spinach dock	f o r b
<i>Rumex pseudonatronatus</i> Barbas	yard dock	forb
-> Rumex domesticus Hartm.		
Rumex sanguineus L.	red veined 'dock	forb
Rumex stenophyllus Ledeb.	narrowleaf dock	f o r b
Ruscus hypoglossum L.		shrub.,
<i>Saccharum</i> spontaneum Linn.	wild sugarcane	graminoid
Sagina procumbens L.	birdseye pearlwort	forb
Sagittaria sagittifolia L.	arrowhead	forb
Sagittaria sagittifolia L.	arrowhead	forb
<i>Salisburia adiantifolia</i> Sm.	maidenhair tree	tree
-> <i>Ginkgo biloba</i> L.		
<i>Salix alba</i> L.	golden willow	tree
var. <i>vitellina</i> (L.)		
<i>Salix alba</i> L.	white' willow.	tree
<i>Salix babylonica</i> L.	weeping willow	t r e e
<i>Salix fragilis</i> L.	crack willow	tree
<i>Salix pentandra</i> L.	laurel willow	shrub
<i>Salsola australis</i> R. Br.	Russian thistle	forb
-> <i>Salsola iberica</i> Senn. & Pau		
<i>Salsola collina</i> Pallas	Russian thistle	forb
<i>Salsola iberica</i> Senn. & Pau	Russian thistle	f o r b
<i>Salsola kali</i> L.	spiny saltwort	forb
-> <i>Salsola iberica</i> Senn. & Pau		
<i>Salsola vermiculata</i> L.		forb
<i>Salvia bertolonii</i> Vis.	meadow clary	shrub
-> <i>Salvia pratensis</i> L.		
<i>Salvia haematodes</i> L.	meadow clary	shrub
-> <i>Salvia pratensis</i> L.		
<i>Salvia nemorosa</i> L.	violet s a g e	forb
<i>Salvia officinalis</i> L.	common sage	forb
<i>Salvia pratensis</i> L.	meadow sage	shrub
<i>Salvia sclarea</i> L.	clary sage	forb
<i>Salvia x sylvestris</i> L.		shrub
<i>Salvia x sylvestris</i> L.	woodland sage	forb
-> <i>Salvia nemorosa</i> L.		
<i>Salvinia biloba</i> Raddi		f e r n
<i>Salvinia herzogii</i> Sota		fern
<i>Salvinia molesta</i> D.S. Mitchel		fern
<i>Sanguisorba minor</i> Scop.	salad burnet	forb
<i>Saponaria ocymoides</i> L.		forb
<i>Saponaria officinalis</i> L.	bouncingbet	forb
<i>Saponaria vaccaria</i> L.	cow cockle	f o r b
-> <i>Vaccaria pyramidata</i> Medic.		
<i>Sarcococca hookerana</i> Boill.	sweet boxx sarcococca	forb
<i>Sarcococca hookeriana</i> Barll.		shrub
var. <i>humilis</i> Rehd. & E.H. Wils.		
<i>Satureja acinos</i> (L.) Scheele	basil thyme	forb
<i>Satureja vulgaris</i> (L.) Fritsch.	wild basil	forb
<i>Scabiosa atropurpurea</i> L.	pin cushions	forb

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<i>Scilla siberica</i> Andr.	Siberian squill	forb	
<i>Scleranthus annuus</i> L.	knawel	forb	
<i>Sclerochloa dura</i> (L.) Beauv.	hardgrass	graminoid	
<i>Scolochloa festucacea</i> (Willd.) Link	sprangletop	graminoid	
<i>Scorzonera hispanica</i> L.	Balck salsify	forb	
<i>Scorzonera laciniata</i> L.	self salsify	forb	
<i>Secale cereale</i> L.	cultivated rye	graminoid	Noxious
<i>Sedum acre</i> L.	mossy stonecrop	forb	
<i>Sedum lineare</i> Thunb.		f o r b	
<i>Sedum spectabile</i> Boreau		forb	
<i>Senecio jacobaea</i> L.	tansy ragwort	forb	Noxious
<i>Senecio mikanioides</i> Otto.	German ivy	forb	
<i>Senecio scandens</i> DC. not Buch-Hm.	German ivy	forb	
-> <i>Senecio mikanioides</i> Otto.			
<i>Senecio sylvaticus</i> L.	woodland groundsel	forb	
<i>Senecio vulgaris</i> L.	common groundsel	f o r b	
<i>Setaria glauca</i> (L.) Beauv.	yellow foxtail	graminoid	
<i>Setaria italica</i> (L.) Beauv.	f o x t a i l m i l l e t	graminoid	
<i>Setaria lutescens</i> (Weigel) Hubb.	yellow foxtail	graminoid	
-> <i>Setaria glauca</i> (L.) Beauv.			
<i>Setaria pallide-fusca</i> (Schumacher) Stapf.	k a v a t t a g r a s s	graminoid	
<i>Setaria pumila</i> (Poir.) Schultes	yellow bristlegrass	graminoid	
-> <i>Setaria glauca</i> (L.) Beauv.			
<i>Setaria verticillata</i> (L.) Beauv.	bristly foxtail	graminoid	
<i>Setaria viridis</i> (L.) Beauv.	green foxtail	graminoid	
<i>Setcreasea pallida</i> Rose.		forb	
<i>Setcreasea purpurea</i> Rose.	purple heart	forb	
-> <i>Setcreasea pallida</i> Rose.			
<i>Sherardia arvensis</i> L.	field madder	forb	
<i>Sideritis montana</i> L.	ironwort	forb	
<i>Silene armeria</i> L.	garden catchfly	forb	
<i>Silene conoidea</i> L.	c o n e c a t c h f l y	forb	
<i>Silene cserei</i> Baumg.	smooth catchfly	forb	
<i>Silene cucubalus</i> Wibel	bladder campion	forb	
-> <i>Silene vulgaris</i> (Moench) Garcke			
<i>Silene dichotoma</i> Ehrh.	hairy catchfly	f o r b	
<i>Silene glauca</i> Salisb.	sweet William	f o r b	
-> <i>Silene armeria</i> L.			
<i>Silene noctiflora</i> L.	nightflowering catchfly	forb	
<i>Silene pratensis</i> (Rafn) Gord. & Gren.	white campion	forb	Noxious
-> <i>Lychnis alba</i> Mill.			
<i>Silene vulgaris</i> (Moench) Garcke	b l a d d e r c a m p i o n	forb	
<i>Silybum marianum</i> (L.) Gaertn	blessed milkthistle	f o r b	Noxious
<i>Sinapis alba</i> L.	white mustard	forb	
-> <i>Brassica hirta</i> Moench			
<i>Sinapis arvensis</i> L.	wild mustard	forb	
-> <i>Brassica kaber</i> (D.C.) Wheeler			
<i>Sisymbrium altissimum</i> L.	'tumble mustard	forb	
<i>Sisymbrium loeselii</i> L.	tall hedge mustard	forb	
<i>Sisymbrium officinale</i> (L.) Scop.	hedge mustard	forb	
<i>Sobaria sorbifolia</i> (L.) Braun		s h r u b	
<i>Solanum aviculare</i> G. Forst.	kangaroo apple	s h r u b	
<i>Solanum dulcamara</i> L.	bittersweet nightshade	shrub	Noxious
<i>Solanum laciniatum</i> Ait.	kangaroo apple	shrub	
-> <i>Solanum aviculare</i> G. Forst.			
<i>Solanum luteum</i> P. Mill.	hairy nightshade	f o r b	
-> <i>Solanum sarrachoides</i> Sendt.			

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<i>Solanum melongena</i> L.	eggplant	shrub
var. <i>esculentum</i> Nees.		
var. <i>serpenthum</i> L.H. Bailey		
<i>Solanum muricatum</i> Ait.	pepino	forb
<i>Solanum muticum</i> N.E.Br.		f o r b
<i>Solanum pseudo- capsicum</i> L.	Jerusalem cherry	shrub
<i>Solanum sarrachoides</i> Sendt.	hairy nightshade	f o r b
• <i>Solanum torvum</i> Sw.		forb
<i>Solanum tuberosum</i> L.	potato	forb
<i>Solanum villosum</i> (L.) P. Mill.	hairy nightshade	forb
-> <i>Solanum</i> sarrachoides Sendt.		
 <i>Sonchus arvensis</i> L.	field milk thistle	forb -Noxious
ssp. <i>arvensis</i>		
ssp. <i>uliginosus</i> (Bieb.) Nyman		
— <i>Sonchus arvensis</i> L.	perennial sowthistle	f o r b Noxious
<i>Sonchus asper</i> (L.) Hill	spiny sowthistle	f o r b
<i>Sonchus oleraceus</i> L.	annual sowthistle	forb
<i>Sonchus uliginosus</i> Bieb.	marsh sowthistle	f o r b — Noxious
-> <i>Sonchus arvensis</i> L.		
<i>Sophora japonica</i> L.	Japanese pagoda tree	tree
<i>Sorbus aria</i> (L.) Crantz	white beam	tree
<i>Sorbus aucuparia</i> L.	European mountain ash	tree
<i>Sorbus intermedia</i> (J.F. Ehrh.) Pers.	mountain ash	tree
<i>Sorghum bicolor</i> (L.) Moench	shattercane	graminoid
<i>Sorghum halepense</i> (L.) Pers.	johnsongrass	graminoid Noxious
<i>Sorghum sudanense</i> (Piper) Stapf	Sudan Grass	graminoid
<i>Sorghum vulgare</i> Pers.	shattercane	graminoid
-> <i>Sorghum bicolor</i> (L.) Moench		
<i>Sparganium erectum</i> L.		forb
• <i>Spartina alterniflora</i> Loisel.	Smooth Cord Grass	graminoid Noxious
<i>Spartina anglica</i> C.E. Hubbard	cordgrass	graminoid Noxious
<i>Spartium junceum</i> L.	Spanish broom	forb
<i>Spergula arvensis</i> L.	corn spurry	f o r b
<i>Spergularia diandra</i> (Guss.) Boiss.	alkali sandspurry	f o r b
<i>Spergularia marina</i> (L.) Griseb.	salt marsh sandspurry	forb
<i>Spergularia rubra</i> (L.) Presl	red sandspurry	forb
<i>Sphaerophysa salsula</i> (Pall.) DC.	swainsonpea	forb Noxious
<i>Spiraea collosa</i> Thunb.	Japanese spiraea	s h r u b
-> <i>Spiraea japonica</i> LF.		
<i>Spiraea filipendula</i> L.	dropwort	forb
-> <i>Filipendula vulgaris</i> Moench.		
<i>Spiraea japonica</i> LF.	Japanese spiraea	shrub
<i>Spiraea sorbifolia</i> L.		s h r u b
-> <i>Sobaria sorbifolia</i> (L.) Braun		
<i>Spiraea x arguta</i> Zab.		shrub
<i>Spiraea x bumalda</i> Burv.		s h r u b
<i>Spiraea x vanhoutei</i> (C. Briot.) Zab.		shrub
<i>Stachys byzantica</i> C. Koch.	lamb's ears	f o r b
<i>Stachys lanata</i> Jacq. not Crantz.	lamb's ears	forb
-> <i>Stachys byzantica</i> C. Koch.		
<i>Stachys olympica</i> of auth. not Poir.	lamb's ears	'forb
-> <i>Stachys byzantica</i> C. Koch.		
<i>Stellaria graminea</i> L.	little starwort	forb
<i>Stellaria media</i> (L.) Cyrill.	common chickweed	forb
<i>Strophostyles leiosperma</i> (T. & G.) Piper	smoothseed wildbean	forb
<i>Swainsona salsula</i> (Pall.) Taub.	swainsonpea	forb Noxious
-> <i>Sphaerophysa salsula</i> (Pall.) DC.		

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<i>Symphytum asperum</i> Lepech.	rough comphrey	forb	
<i>Symphytum officinale</i> L.	common comfrey	forb	
<i>Syringa villosa</i> Vahl.	late lilac	shrub	
<i>Syringa vulgaris</i> L.	lilac	shrub	
<i>Taeniatherum caput-medusae</i> (L.) Nevski	medusahead	graminoid	Noxious
-> <i>Elymus caput-medusae</i> L.			
<i>Tagetes tenuifolia</i> Cav.	signet marigold	forb	
<i>Tamarix algeriensis</i> Hort.	manna plant	shrub	
-> <i>Tamarix gallica</i> L.			
<i>Tamarix angelica</i> Webb.	manna plant	shrub	
-> <i>Tamarix gallica</i> L.			
<i>Tamarix chinensis</i> Loureiro	Chinese tamarisk	shrub	
<i>Tamarix gallica</i> L.	manna plant	shrub	
<i>Tamarix odessana</i> Steven ex. Bunge.		shrub	
-> <i>Tamarix ramosissima</i> Ledeb.			
<i>Tamarix parviflora</i> DC.	tamarisk	shrub	
<i>Tamarix pentandra</i> Pall.		shrub	
-> <i>Tamarix ramosissima</i> Ledeb.			
<i>Tamarix ramosissima</i> Ledeb.		shrub	
<i>Tanacetum vulgare</i> L.	common tansy	forb	Noxious
<i>Taraxacum laevigatum</i> (Willd.) DC.	red seeded dandelion	forb	
<i>Taraxacum officinale</i> Weber	dandelion	forb	
<i>Teucrium lucidum</i> L.		forb	
<i>Thalictrum aquilegifolium</i> L.		forb	
<i>Thesium linophyllum</i> L.	flaxleaf	forb	
<i>Thinopyrum ponticum</i> (Podp.) Barkworth	tall wheatgrass	graminoid	
-> <i>Agropyron elongatum</i> (Host) Beauv.			
<i>Thlaspi arvense</i> L.	field pennycress	forb	
<i>Thymus chamaedrys</i> Fries.		shrub	
-> <i>Thymus pseudolanuginosus</i> L.			
<i>Thymus glaber</i> Mill.		shrub	
-> <i>Thymus pseudolanuginosus</i> L.			
<i>Thymus montanus</i> Waldst. & Kit.		shrub	
-> <i>Thymus pseudolanuginosus</i> L.			
<i>Thymus praecox</i> Opiz	thyme	forb	
-> <i>Thymus serpyllum</i> L.			
<i>Thymus pseudolanuginosus</i> L.		shrub	
<i>Thymus serpyllum</i> L.	creeping thyme	forb	
<i>Tilia cordata</i> Mill.	small leaved European linden	tree	
<i>Tilia parviflora</i> J.F. Ehrh. ex Hoffm.	small leaved European linden	tree	
-> <i>Tilia cordata</i> Mill.			
<i>Tilia platyphyllos</i> Scop.	large leaved linden	tree	
<i>Torilis arvensis</i> (Hudson) Link.		forb	Noxious
<i>Trachelium caeruleum</i> L.		forb	
<i>Tradescantia x andersoniana</i> W. Ludwig. & Rohw.		forb	
<i>Tragopogon dubius</i> Scop.	western salsify	forb	
<i>Tragopogon. mirus</i> Ownbey	remarkable goatsbeard	forb	
<i>Tragopogon miscellus</i> Ownbey	hybrid salsify	forb	
<i>Tragopogon porrifolius</i> L.	common salsify	forb	
<i>Tragopogon pratensis</i> L.	meadow salsify	forb	
<i>Tribulus terrestris</i> L.	puncturevine	forb	Noxious
<i>Trifolium agrarium</i> L.	hop clover	forb	
<i>Trifolium arvense</i> L.	-rabbitfoot clover	forb	
<i>Trifolium aureum</i> Pollich	hop clover	forb	
-> <i>Trifolium agrarium</i> L.			
<i>Trifolium campestre</i> Schreb.	large hop clover	forb	
-> <i>Trifolium procumbens</i> L.			

EXOTIC PLANT SPECIES OF THE COLUMBIA BASIN

Trifolium dubium Sibth.	small hop clover	forb
Trifolium fragiferum L.	strawberry clover	forb
Trifolium hybridum L.	alsike clover	f o r b
Trifolium incarnatum L.	crimson clover	forb
Trifolium pratense L.	red clover	forb
Trifolium procumbens L.	large hop clover	f o r b
Trifolium repens L.	white clover	forb
Trifolium resupinatum L.	persian clover	forb
Trifolium subterraneum L.	subterranean clover	forb
Triticum aestivum L.	cultivated wheat	graminoid
Triticum pungens Pers.		forb
->Elymus pungens (Pers.) Meldaris		
Tritonia masoniorum L. Bolus	monterbretia	forb
->Crocasmia masoniorum (L. Bolus.) N.E. Br.		
Ulex europaeus L.	gorse	forb Noxious
Ulmus carpinifolia Ruppis ex Suckow.	smooth leaf elm	tree
Ulmus davidiana Planch.		tree
Ulmus davidiana Planch.	Japanese elm	tree
var. japonica (Rehd.) Nakai.		
Ulmus glabra Huds.	wych elm	tree
Ulmus parviflora Jacq.	Chinese elm	tree
Ulmus pumila L.	Siberian elm	tree
Vaccaria pyramidata Medic.	cowcockle	forb
Vaccaria segetalis (Neck.) Garcke	cowcockle	forb
-> Vaccaria pyramidata Medic.		
Valeriana officinalis' L.	common valerian	forb
Valerianella carinata Loisel.	keeled corn salad	forb
Valerianella locusta (L.) Betcke	common cornsalad	f o r b
Ventenata dubia (Leers) Coss. & Dur.	ventenata	graminoid
Verbascum blattaria L.	moth mullein	forb
Verbascum thapsus L.	common mullein	forb Noxious
Verbascum virgatum Stokes		forb
Verbena bracteata Lag. & Rodr.	prostrate vervain	forb
Veronica anagallis-aquatica L.	water speedwell	forb
Veronica arvensis L.	corn speedwell	forb
Veronica biloba L.	bilobed speedwell	forb
Veronica chamaedrys L.	germander speedwell	forb
Veronica filiformis Sm.	thread stalk speedwell	forb
Veronica gentianoides Vahl.		forb
Veronica longifolia L.	longleaf speedwell	forb
Veronica officinalis L.	common speedwell	forb
Veronica persica Poir.	persian speedwell	forb
Veronica serpyllifolia L.	thymeleaf speedwell	forb
Veronica triphyllos L.		forb
Veronica verna L.	spring speedwell	forb
Viburnum carlesii Hemsl.		shrub
Viburnum dilatatum Thunb.		shrub
Viburnum lanata L.	wayfaring tree	shrub
Viburnum rhytidophyllum Hemsl.		shrub
Viburnum tinus L.	laurustinus	shrub
Viburnum x burkwoodii Hart.		shrub
Vicia cracca L.	bird vetch	f o r b
Vicia faba L.	broad bean	forb
Vicia sativa L.	common vetch	forb
Vicia sativa L.	common vetch	forb
var. angustifolia (L.) Wahlb.		
var. sativa		

EXOTIC PLANT SPECIES OF THE COLUMBIA BASIN

Vicia tetrasperma (L.) Moench	sparrow vetch	forb	
Vicia villosa Roth	hairy vetch	forb	
var. villosa			
Vinca major L.	greater periwinkle	forb	
Vincia major L.		forb	
ssp. hirsuta (Boiss.) Stearn.			
Viola arvensis Murr.	field violet	forb	
Viola lanceolata L.	lance leaved violet	forb	
Viola odorata L.	sweet violet	forb	
Viticella viticella (L.) Small.		forb	
-> Clematis vitalba L.			
Vitis vinifera L.	European grape vine	forb	
Vulpia bromoides (L.) S.F.	Gray squirreltail fescue	graminoid	
-> Festuca bromoides L.			
Xanthium spinosum L.	spiny cocklebur	forb	Noxious
Zoysia tenuifolia Willd. ex Trin.	Mascaene Grass	graminoid	
Zygophyllum fabago L.	syrian beancaper	forb	Noxious

PART II.

DESIGNATED NOXIOUS WEEDS

"Noxious" is a legal classification, not an ecological term. Plants that can have significant environmental or economic impact can be designated as noxious by various government agencies. Federal and state laws require certain actions directed at the management of noxious weeds.

The Federal Government and each of the states in the study area (Idaho, Montana, Oregon, Washington, and Wyoming) have their own noxious weed lists. The noxious lists for Montana, Washington and Oregon have multiple categories. The individual state category codes are included in the listing for each noxious weed. For entries without a code, the weed is simply classified as noxious.

In Montana: Category 1 is for weeds that are well established and generally widespread. The management strategies are directed at containment and suppression. Category 2 species are weeds that have been recently introduced to Montana or are rapidly spreading. Management efforts are directed at monitoring, containment, and eradication when possible. Category 3 species are weeds that have had significant impact in adjoining states and are believed to be adapted to Montana climate. The Category 3 weeds have not yet been detected in Montana or are found only in localized, small, scattered infestations. Early detection and immediate eradication are the management goals. The designations are made by the State Department of Agriculture.

In Oregon: Category A species are weeds of known economic importance that are still limited to small enough infestations to allow possible eradication/containment. Category A also includes weeds that are not known to occur in Oregon but exist in neighboring states and invasion of Oregon seems imminent. Category B species are weeds of economic importance that are abundant in some regions of Oregon but are of limited distribution in other Oregon counties. Where implementation of a fully-integrated statewide management plan is not feasible, biological control is the main strategy. Category T species are the noxious weeds that require implementation of an integrated statewide management plan. The designations are made by the Oregon State Weed.

In Washington: Category A species are noxious weeds not native to the state but are of limited distribution or have not been found in a region of Washington where they would pose a serious threat. Category B species are noxious weeds whose populations in a region are such that all seed production could be prevented within a calendar year. Category C species are any other noxious weeds.

FEDERAL NOXIOUS WEED LIST

Acginctia spp.		Forb
Agcratina adenophora		Forb
Alectra spp.		Forb
Alternanthera scssilis		Forb
Asphodelus stilosus		Forb
Avena sterilis	animated oat	Graminoid
Azolla pinnata		Fern
Borreria alata		Forb
Carthamus oxycantha .		Forb
Chrysopogon aciculatus		Graminoid
Commelina benghalensis		Forb
Crupina vulgaris	common crupina	Forb
Cuscuta spp. (all non-native species)	exotic dodders	Forb
Digitaria abyssinica		Graminoid
Digitaria scalarum		Graminoid
Digitaria vclutina		Graminoid
Drymaria arcuarioides		Forb
Eichhornia azurea	peacock hyacinth	Forb
Emex australis		Forb
Emex spinosa		Shrub
Eupatorium adenophorum		Forb
Euphorbia prunifolia		Forb
Galega officinalis	goat's rue	Forb
Hieracium mantegazzianum	giant hogweed	Forb
Hydrilla verticillata		Forb
Hygrophila polysperma		Forb
Imperata brasiliensis		Graminoid
Imperata cylindrica		Graminoid
Ipomoea aquatica	wafer spinach	Forb
Ipomoea triloba		Forb
Ischacum rugosum	wrinkle duck beak	Graminoid
Lagarosiphon major		Forb
Leptochloa chinensis	red sprangle top	Graminoid
Limnophila sessiliflora		Forb
Lycium ferocissimum		Forb
Melastoma malabaricum		Forb
Mikania cordata		Forb
Mikania micrantha		Forb
Mimosa invisa		Forb
Mimosa pigra		Forb
Monochoria hastata		Forb
Monochoria vaginalis		Forb
Nassella trichotoma		Graminoid
Opuntia aurantiaca	tiger pear	Forb
Orobancha spp. (all non-natives)	exotic broomrapes	Forb
Oryza longistaminata		Graminoid
Oryza punctata		Graminoid
Oryza rufipogon		Graminoid
Ottelia alismoides		Forb
Paspalum scrobiculatum	kodo millet	Graminoid
Pennisetum clandestinum	kikuyu grass	Graminoid
Pennisetum macrourum		Graminoid
Pennisetum pedicellatum		Graminoid
Pennisetum polystachion		Graminoid
Prosopis alapataco	alpataco	Shrub
Prosopis argentina	algarobilla	Shrub
Prosopis articulata		Shrub
Prosopis burkartii		Shrub
Prosopis caldenia	calden	Shrub
Prosopis calingastana	cusqui	Shrub
Prosopis campestris	algarrobillo	Shrub
Prosopis castellanensis		Shrub
Prosopis denudans	algarrobo patagonica	Shrub
Prosopis elata	algarrobito	Shrub
Prosopis farcta	acarín	Shrub
Prosopis ferox	churqui	Shrub

NOXIOUS WEED LIST SPECIES - FEDERAL AND NW STATES

Prbsopis fiebripii		Shrub
Prosopis hassleri	algarrobo	Shrub
Prosopis humilis	barba de tigre	Shrub
Prosopis kuntzei		Shrub
Prosopis pallida		Shrub
Prosopis palmieri		Shrub
Prosopis repens		Shrub
Prosopis rojasiana		Shrub
Prosopis ruizcalii		Shrub
Prosopis ruscifolia	venal	Shrub
Prosopis sciranthia	temoj	Shrub
Prosopis strobilifera		Shrub
Prosopis torquata	tintitaco	Shrub
Rottboellia cochinchinensis	Kelly grass	Graminoid
Rottboellia exaltata	itchgrass	Graminoid
Rubus fruticosus	bramble	
Rubus moluccanus		Shrub
Sagittaria sagittifolia	arrowhead	Forb
Salsola vermiculata		Forb
Salvinia auriculata		Fern
Salvinia biloba		Fern
Salvinia hirsutii		Fern
Salvinia molesta		Fern
Setaria pinnatifida	kavattagrass	Graminoid
Solanum torvum		Forb
Sparganium angustifolium		Forb
Stellaria media		Forb
Stratiotes aloides	watersoldier	Forb
Striga spp.		Forb
Tridax procumbens		Forb
Urochloa panicoides		Graminoid

IDAHO NOXIOUS WEED LIST

Acgilops cylindrica	jointed goatgrass	Graminoid
Ambrosia tomentosa	skelctonlcaf bursage	Forb
Cardaria draba	hoary cress	Forb
Carduus nutans	musk thistle	Forb
Centaurea diffusa	diffuse knapweed	Forb
Centaurea maculosa	spotted knapweed	Forb
Centaurea pratensis	meadow knapweed	Forb
Centaurea repens	Russian knapweed	Forb
Centaurea solstitialis	yellow starthistle	Forb
Chondrilla juncea	rush skeletonweed	F o r b
Cirsium arvense	Canada thistle	Forb
Conium maculatum	poison hemlock	Forb
Convolvulus arvensis	field bindweed	Forb
Crupina vulgaris	common crupina	Forb
Cytisus scoparius	scotch broom	Shrub
Euphorbia dentata		Shrub
Euphorbia esula	leafy spurge	Forb
Franseria discolor	skelctonlcaf bursage	Forb
Hieracium aurantiacum	orange hawkweed	Forb
Hieracium pratense	yellow hawkweed	Forb
Hyoscyamus niger	black hcnbanc	Forb
Isatis tinctoria	dyer's woad	Forb
Lepidium latifolium	perennial pepperweed	Forb
Linaria dalmatica	dalmatian toadflax	Forb
Linaria vulgaris	yellow toadflax	Forb
Lythrum salicaria	purple loowtrife	Forb
Milium vernale		Graminoid
Nardus stricta	moor matgrass	Graminoid
Onopordum acanthium	Scotch thistle	Forb
Senecio jacobaea	tansy ragwort	Forb
Solanum elaeagnifolium	silverlcaf nightshade	Forb
Solanum rostratum	buffalobur	Forb
Sonchus arvensis	perennial sowthistle	Forb
Sorghum halepense	johnsongrass	Graminoid
Zygophyllum fabago	syrian bcancapcr	Forb

NOXIOUS WEED LIST SPECIES - FEDERAL AND NW STATES

MONTANA NOXIOUS WEED LIST

Cardaria draba	hoary cress	Forb	Category- 1
Centaurea diffusa	diffuse knapweed	F o r b	Category- 1
Centaurea maculosa	spotted knapweed	Forb	Category- 1
Centaurea repens	Russian knapweed	Forb	Category- 1
Centaurea solstitialis	yellow starthistle	Forb	Category-3
Chondrilla juncea	rush skeletonweed	Forb	Category-3
Cirsium arvense	Canada thistle	Forb	Category-1
Convolvulus arvensis	field bindweed	Forb	Category- 1
Crupina vulgaris	common crupina	F o r b	Category-3
Euphorbia esula	leafy spurge	" F o r b	Category-1
Hypericum perforatum	common St. Johns wort	Forb	Category-1
Isatis tinctoria	dyer's woad	Forb	Category-2
Linaria dalmatica	dalmatian toadflax	Forb	Category-1
Lythrum salicaria	purple loosestrife	Forb	Category-2
Potentilla recta	sulfur cinquefoil	F o r b	Category- 1

NOXIOUS WEED LIST SPECIES - FEDERAL AND NW STATES

OREGON NOXIOUS WEED LIST

Abutilon theophrasti	velvetleaf	Forb	Category - B
Agropyron cylindrica	jointed goatgrass	Graminoid	Category-B
Agropyron repens	quackgrass	Graminoid	Category-B
Alhagi pseudalhagi		Forb	Category-A
Ambrosia artemisiifolia	common ragweed	Forb	Category-B
Cardaria spp.	whitclop		Category-B
Carduus nutans	musk thistle	Forb	Category-B
Carduus pycnocephalus		Forb	Category-B
Carduus tenuiflorus		Forb	Category-B
Carthamus bacticus		Forb	Category-B
Carthamus lanatus		Forb	Category-A
Carthamus lencocaulos		Forb	Category-A
Centaurea calcitrapa	purple starthistle	Forb	Category-A
Centaurea diffusa	diffuse knapweed	Forb	Category-B
Centaurea iberica	Iberian starthistle	Forb	Category-A
Centaurea maculosa	spotted knapweed	Forb	Category-B
Centaurea pratensis	meadow knapweed	Forb	Category-B
Centaurea repens	Russian knapweed	Forb	Category-B
Centaurea solstitialis	yellow starthistle	Forb	Category-B
Centaurea squarrosa	squarrose knapweed	Forb	Category-A
Centaurea virgata	squarrose knapweed	Forb	Category-B
Chondrilla juncea	rush skeletonweed	Forb	Category-B
Cirsium arvense	Canada thistle	Forb	Category-B
Cirsium vulgare	bull thistle	Forb	Category-B
Conium maculatum	poison hemlock	Forb	Category-B
Convolvulus arvensis	field bindweed	Forb	Category-B
Crupina vulgaris	common crupina	Forb	Category-A
Cuscuta spp.	dodder		Category-B
Cyperus esculentus	yellow nutedge	Graminoid	Category-B
Cytisus monspessulanus	French broom	Forb	Category-B
Cytisus scoparius	scotch broom	Shrub	Category-B
Elodea densa	Brazilian elodea	Forb	Category-B
Equisetum arvense	field horsetail	Fern	Category-B
Equisetum telmateia	giant horsetail	Fern	Category-B
Euphorbia esula	leafy spurge	Forb	Category-B
Halimolobos glomerata	haloglossa	Forb	Category-B
Hemizonia pungens	spikegrass	Forb	Category-B
Hydrilla verticillata		Forb	Category-A
Hypericum perforatum	common St. John's wort	Forb	Category-B
Isatis tinctoria	dyer's woad	Forb	Category-B
Kochia scoparia	kochia	Forb	Category-B
Lepidium latifolium	perennial pepperweed	Forb	Category-B
Linaria dalmatica	dalmatian toadflax	Forb	Category-B
Linaria vulgaris	yellow toadflax	Forb	Category-B
Lythrum salicaria	purple loosestrife	Forb	Category-B
Myriophyllum spicatum	Eurasian watermilfoil	Forb	Category-B
Nardus stricta	moor matgrass	Graminoid	Category-A
Onopordum acanthium	Scotch thistle	Forb	Category-B
Panicum miliaceum	wild proso millet	Graminoid	Category-B
Peganum harmala	peganum		Category-A
Polygonum cuspidatum	Japanese knotweed	Forb	Category-B
Rorippa sylvestris	yellow fieldcress	Forb	Category-A
Salvia achillifolia	Mediterranean sage		Category-B
Senecio jacobaea	tansy ragwort	Forb	Category-B
Silybum marianum	blessed milkthistle	Forb	Category-B
Solanum elaeagnifolium	silverleaf nightshade	Forb	Category-A
Solanum rostratum	buffalobur	Forb	Category-B
Sorghum halepense	johnsongrass	Graminoid	Category-B
Spartina alterniflora	Smooth Cord Grass	Graminoid	Category-A
Sphacelophora salsola	swainsonia	Forb	Category-B
Taeniatherum caput-medusae	medusahed	Graminoid	Category-B
Tribulus terrestris	puncturevine	Forb	Category-B
Ulex europaeus	gorse	Forb	Category-B
Xanthium spinosum	spiny cocklebur	Forb	Category-B

NOXIOUS WEED LIST SPECIES - FEDERAL AND NW STATES

WASHINGTON NOXIOUS WEED LIST

Abutilon theophrasti	velvetcalf	Forb	Category-A
Aegilops cylindrica	jointed goatgrass	Graminoid	Category-C
Alhagi pseudalhagi		Forb	Category-B
Alopecurus myosuroides	black twitch	Graminoid	Category-B
Amorpha fruticosa	indigobush		Category-B
Anchusa officinalis	common bugloss		Category-B
Anthriscus sylvestris	cow parsley	Forb	Category-C
Artemisia absinthium	absinth wormwood	Forb	Category-C
Bryonia alba	white bryony	Forb	Category-B
Cardaria draba	hoary cress	Forb	Category-C
Cardaria pubescens	hairy whitetop	Forb	Category-C
• Carduus acanthoides	plumeless thistle	Forb	Category-B
Carduus nutans	musk thistle	Forb	Category-B
Carduus pycnocephalus		Forb	Category-A
Carduus tenuiflorus		Forb	Category-A
Cenchrus longispinus	longspine sandbur	Graminoid	Category-B
Centaurea calcitrapa	purple starthistle	Forb	Category-A
Centaurea diffusa	diffuse knapweed	Forb	Category-B
Centaurea juncea	Knapweed	F o r b	Category-B
Centaurea juncea x nigra	Knapweed	Forb	Category-B
Centaurea macrocephala	bighead knapweed	Forb	Category-B
Centaurea maculosa	spotted knapweed	F o r b	Category-A
Centaurea nigra	black knapweed	Forb	Category-B
Centaurea nigrescens	Knapweed	Forb	Category-A
Centaurea repens	Russian knapweed	Forb	Category-B
Centaurea solstitialis	yellow starthistle	F o r b	Category-B
Chaconnorrhinum minus	dwarf snapdragon	Forb	Category-C
Chondrilla juncea	rush skeletonweed	Forb	Category-B
Cirsium arvense	Canada thistle	Forb	Category-C
Cirsium vulgare	bull thistle	Forb	Category-C
Conium maculatum	poison hemlock	Forb	Category-C
Convolvulus arvensis	field bindweed	Forb	Category-C
Crepina vulgaris	common crepina	F o r b	Category-A
Cuscuta approximata	clustered dodder	Forb	Category-C
Cynoglossum officinale	houndstongue	Forb	Category-C
Cyperus esculentus	yellow nutsedge	Graminoid	Category-B
Cytisus scoparius	scotch broom	Shrub	Category-B
Daucus carota	wild carrot	Forb	Category-C
Echium vulgare	blueweed	Forb	Category-B
Egeria densa	Brazilian elodea	Forb	Category-B
Eruca vesicaria	garden rocket	Forb	Category-C
Euphorbia esula	leafy spurge	Forb	Category-B
Helianthus ciliaris	Texas blueweed	F o r b	Category-A
Hemizonia pungens	spikeweed	Forb	Category-C
Hieracium mantegazzianum	giant hogweed	Forb	Category-A
Hibiscus trionum	venice mallow	F o r b	Category-A
Hieracium aurantiacum	orange hawkweed	Forb	Category-B
Hieracium pilosella	mouse ear hawkweed	F o r b	Category-A
Hieracium pratense	yellow hawkweed	Forb	Category-B
Hyoscyamus niger	black henbane	Forb	Category-C
Hypericum perforatum	common St. John's wort	Forb	Category-C
Hypochaeris radicata	spotted cat's ear	Forb	Category-B
Isatis tinctoria	dyer's woad	Forb	Category-A
Kochia scoparia	kochia	Forb	Category-C
Lamium hybridum	dead-nettle	F o r b	Category-B
Lepidium latifolium	perennial pepperweed	Forb	Category-B
Lepidrodiclis holostoides			Category-B
Linaria dalmatia	dalmatian toadflax	Forb	Category-B
Linaria vulgaris	yellow toadflax	Forb	Category-B
Lychnis alba	white campion	Forb	Category-C
Lysimachia vulgaris	garden loosestrife	Forb	Category-B
Lythrum salicaria	purple loosestrife	Forb	Category-B
Lythrum virgatum		F o r b	Category-B
Matricaria maritima	false chamomile	Forb	Category-C
Mirabilis nyctaginia	wild four o'clock	Forb	Category-A
Myriophyllum brasiliense	parrotfeather	Forb	Category-B
Myriophyllum spicatum	Eurasian watermilfoil	Forb	Category-B

NOXIOUS WEED LIST SPECIES - FEDERAL AND NW STATES

Onopordum acanthium	Scotch thistle	F o r b	Category-B .
Peganum harmala	pcganum		Category-A
Picris hieracoides	bitterweed		Category-B
Potentilla recta	sulfur cinquefoil	Forb	Category-C
Proboscidea louisianica	devil's claw	Forb	Category-A
Rorippa austriaca .	Austrian fieldcress	Forb	Category-B
Secale cereale	cultivated rye	Graminoid	Category-C
Senecio jacobaea	tansy ragwort	Forb	Category-B
Silybum marianum	blessed milkthistle	Forb	Category-A
Solanum dulcamara	bittersweet nightshade	Shrub	Category-C
Solanum elaeagnifolium	silverleaf nightshade	Forb	Category-A
Solanum rostratum	buffalobur	Forb	Category-A
Sonchus arvensis	perennial sowthistle	F o r b	Category-B
Sorghum halepense	johnsongrass	Graminoid	Category-A
Spartina alterniflora	Smooth Cord Grass	Graminoid	Category-B
Spartina anglica	cordgrass		Category-B
Sphaerophysa salsula	swainsonpca	Forb	Category-B
Taraxacum vulgare	common tansy	Forb	Category-C
Torilis arvensis		Forb	Category-B
Tribulus terrestris	puncturevine	F o r b	Category-C
Ulex europaeus	gorse	Forb	Category-B
Verbascum thapsus	common mullein	Forb	Category-C
Xanthium spinosum	spiny cocklebur	Forb	Category-C
Zygophyllum fabago	syrian beancaper	Forb	Category-A

NOXIOUS WEED LIST SPECIES - FEDERAL AND NW STATES

WYOMING NOXIOUS WEED LIST

Agropyron repens	quackgrass	Graminoid
Ambrosia tomentosa	skeletonleaf bursage	Forb
Arctium minus	common burdock	Forb
Cardaria pubescens	hairy whitetop	Forb
Carduus acanthoides	plumeless thistle	Forb
Carduus nutans	musk thistle	F o r b
Centaurea diffusa	diffuse knapweed	Forb
Centaurea maculosa	spotted knapweed	Forb
Centaurea repens	Russian knapweed	F o r b
Chrysanthemum leucanthemum	oxeye daisy	Forb
Cirsium arvense	Canada thistle	F o r b
Convolvulus arvensis	field bindweed	Forb
Cynoglossum officinale	houndstongue	Forb
Euphorbia csula	'leafy spurge	Forb
Isatis tinctoria	dyer's woad	Forb
Linaria d a l m a t i c a	dalmatian toadflax	Forb
Linaria vulgaris	yellow toadflax	Forb
Onopordum acanthium	Scotch thistle	F o r b
Sonchus arvensis	perennial sowthistle	Forb

PART IIIA

MAPS OF DISTRIBUTION GRAPHS OF POPULATION EXPANSION CURVES SPREAD RATE EQUATIONS

Maps and graphic plots have been included for "important" exotic species. Important species are those that have a known distribution by county (from all data sources) of at least 25 counties, or have a linear expansion rate (derived from only herbarium records) equivalent to 25 counties per century, or are increasing their range at an exponential rate (based only on herbarium records). There are 199 counties in the five state region.

To produce the maps the INVADERS software asks the database for all distribution records for a species within the five northwest states (ID, MT, OR, WA, WY). The maps show specific counties where at least one distribution record exists. The time span of the search is listed in the label above the map. Maps could be generated for restricted, sequential, or cumulative time spans. For the purposes of this report the search was executed for the entire time span of the database, 1875-1994.

The INVADERS database will show definitive presence of a species, not proof of its absence. The absence of data for a species within a county does not guarantee the absence of the species from the county. It could mean that data collection so far has not found any records for that species. The more data sources that we collect data from, the better the chance are that a blank county means no presence of the species. The INVADERS database (Release 4.1) now contains 43,358 distribution record which were used to create the maps.

The graphic plots show the cumulative number of counties with herbarium records for the species in a given year. Only the herbarium records were searched to create these graphic plots. The data from herbarium collections are plotted as * and the points connected by simple linear interpolation. The first and last year of herbarium record is printed on the graph.

The primary herbarium data sources (15,161 records) for this report were:

Washington State University (Pullman) Herbarium
University of Montana (Missoula) Herbarium
Frank Forcella 1980 Regional Herbaria Study

Least-square approximations were used to derive polynomial equations to the third degree with y (dependent variable) being the number of counties where the presence of the exotic was documented by a herbarium specimen and x (independent variable) being the

first year of record for each county. The Chi squared method of error measurement was then used to determine which model curve provide the best fit to the herbarium data. The resulting curve is plotted as a fine dotted line on the graph with the actual herbarium data to show the model pattern of growth.

The best fit polynomial is given at the upper left side of the graph. The equation can be used to find the number of counties infected by the exotic plant for a given year.

y is the number of counties infected at a given year.

x is the year in question subtracted by the year that the first record is found in those four sources.

Following are two examples that show how the equation works to describe the past and predict the future spread:

1. You want to know how widespread *Nepeta cataria* (catnip) was in 1964.

The best fitting equation was linear (first degree polynomial):

$$y = -0.533719 + 0.471613 * x^1$$

The first record is found in the year 1885

We want to find the number of counties infected in 1964.

First we calculate x:

x = year in question - year of first record.

$$x = 1964 - 1885 = 79$$

Second we use 79 for x in the equation:

$$y = -0.533719 + (0.471613 * 79)$$

$$y = -0.533719 + 37.257427$$

$$y = 36.7 \text{ or about } 37 \text{ counties.}$$

This means that at the year 1964, the least square approximation suggests that *Nepeta cataria* would have been found in at least 37 counties. We can see from the graph that this approximation is very close to the actual data that we have.

2. You want to predict the minimum number of counties that might be colonized by *Hesperis matronalis* (damesrocket) by the year 2000.

The best fitting equation was exponential (second degree polynomial):

$$y = 0.960228 - 0.017035 * x^1 + 0.002522 * x^2$$

The first record is found in the year 1891

We want to predict minimum number of counties expected to be infected at the year 2000. Our assumption is that the future growth rate will match the current growth rate.

First we calculate x:

x = year in question - year of first record.

$$x = 2000 - 1891 = 109$$

Second we use 109 for x in the equation:

$$y = 0.960228 - (0.017035 * 109) + (0.002522 * (109)^2)$$

$$y = 0.960228 - 1.856815 + 29.963882$$

$$y = 29.1 \text{ or } 29 \text{ counties.}$$

This means that by the year 2000, the least square approximation predicts that *Hesperis matronalis* will be found in a minimum of 29

counties. The prediction is based on the current growth rate.

One can recognize at least five time-dependent patterns of weed spread. Different spread curves suggest different regional scale management strategies for a species. Linear series are usually old weeds that have already filled up most of the region. Root-function series are weeds that have reached their maximum range but are of limited distribution. Logistic (s-curve) series had a slow start, a rapid middle expansion phase, and now their rate of spread is leveling off. The middle expansion phase is often is the result of a change in land use or agronomic practices, or an acclimation of the invader to its new environment. Positive exponential curves are rapidly expanding weeds. Early exponential curves suggest weeds that have a potential similar to spotted knapweed or leafy spurge but are in an early phase of expansion. The early exponentials include the new weeds which will be the spotted knapweeds of the next 20 years.

These plots show the current state of the model using only the herbarium data. The curve fitting method and data source selection is still being refined to provide the most useful model for estimating future expansion of exotics invading the Columbia Basin. Data source selection needs to be considered before interpreting the equations. Data from state agriculture department surveys focus on well known or widespread weeds and creates a sudden positive slope bias in the curves. Data from state weed identification labs provides many new county records in a manner similar to that of herbarium data.

The current analysis is based on 43% or less of the potentially available data. We estimate that 100,000 to 250,000 exotic plant distribution records are available. Primary sources of distribution data are listed in Table 1.

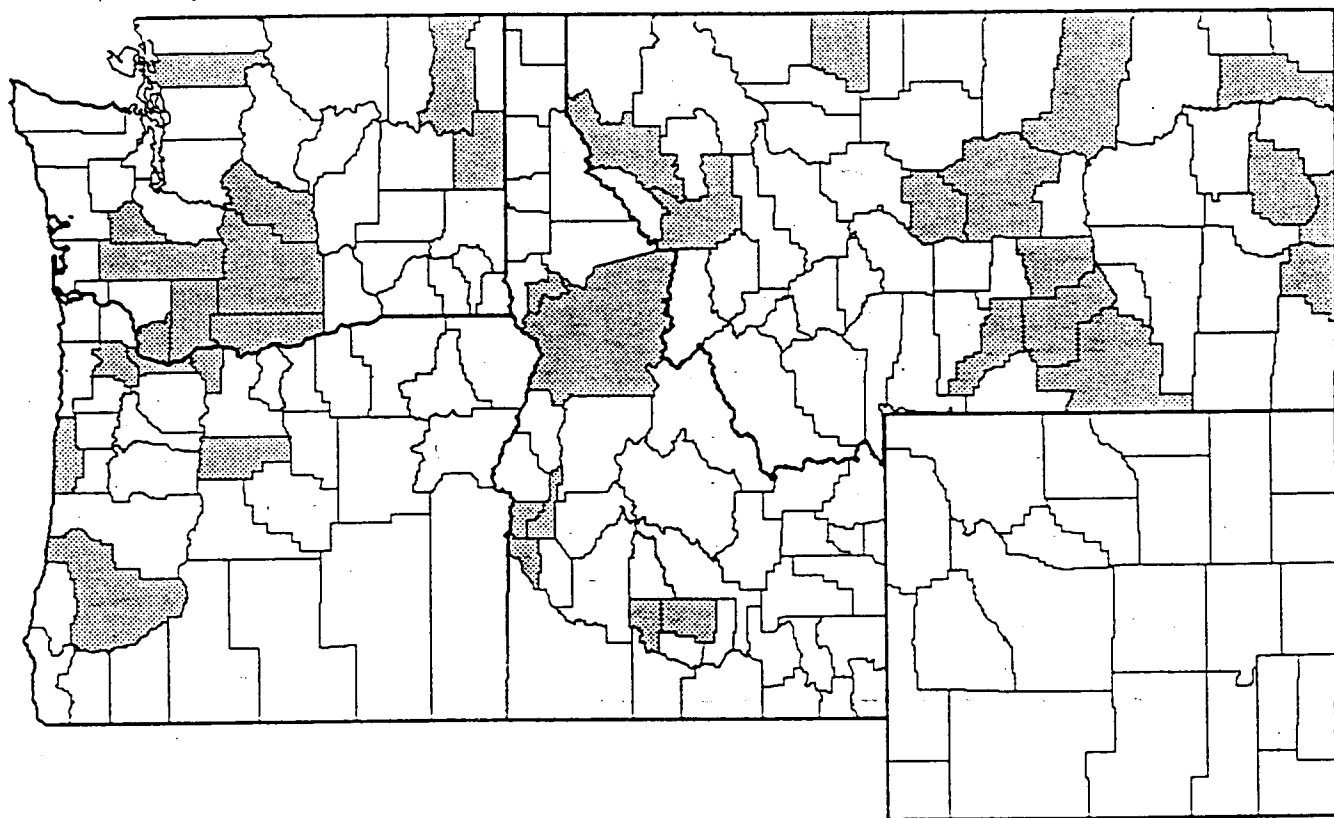
At the University of Montana approximately 5% of the herbarium specimens were exotics collected in the 5 state study area. A low and high number is given for the other regional herbaria. The range is 5% to 15% of the total holdings of each herbarium. The actual number of exotics can only be determined after collecting the data and processing the data for records meeting minimum standards for completeness and quality.

Table 1. Primary sources county distribution records for weeds.

SOURCE	# EXOTIC RECORDS*	STATUS
U MT Herb	3,440	completed
MT S U Herb	3,500-10,500	access restricted
WA S U Herb	15,000-45,000	nearing completion
U ID Herb	9,000-27,000	in progress
OR S U & U OR Herbariums	19,000-56,500	being reorganized available fall 94
U WY Herb	27,000-82,000	will cooperate
F. Forcella study	7,330	completed
R. Old / Ext. Ser. (MT, ID, OR, WA <1991)	10,891	completed
new Ext. Ser. (MT, ID, OR, 91-93)	1,967	completed
new WA Ext. Ser.	700	in progress
MT Dept Ag	928	completed
OR Dept Ag	1128	completed
WY Dept Ag	840	completed
ECODATA PLOTS	10,888	completed
REGION 6 PLOTS	10,000+	data available in Oct 94
Special Studies	500	part completed

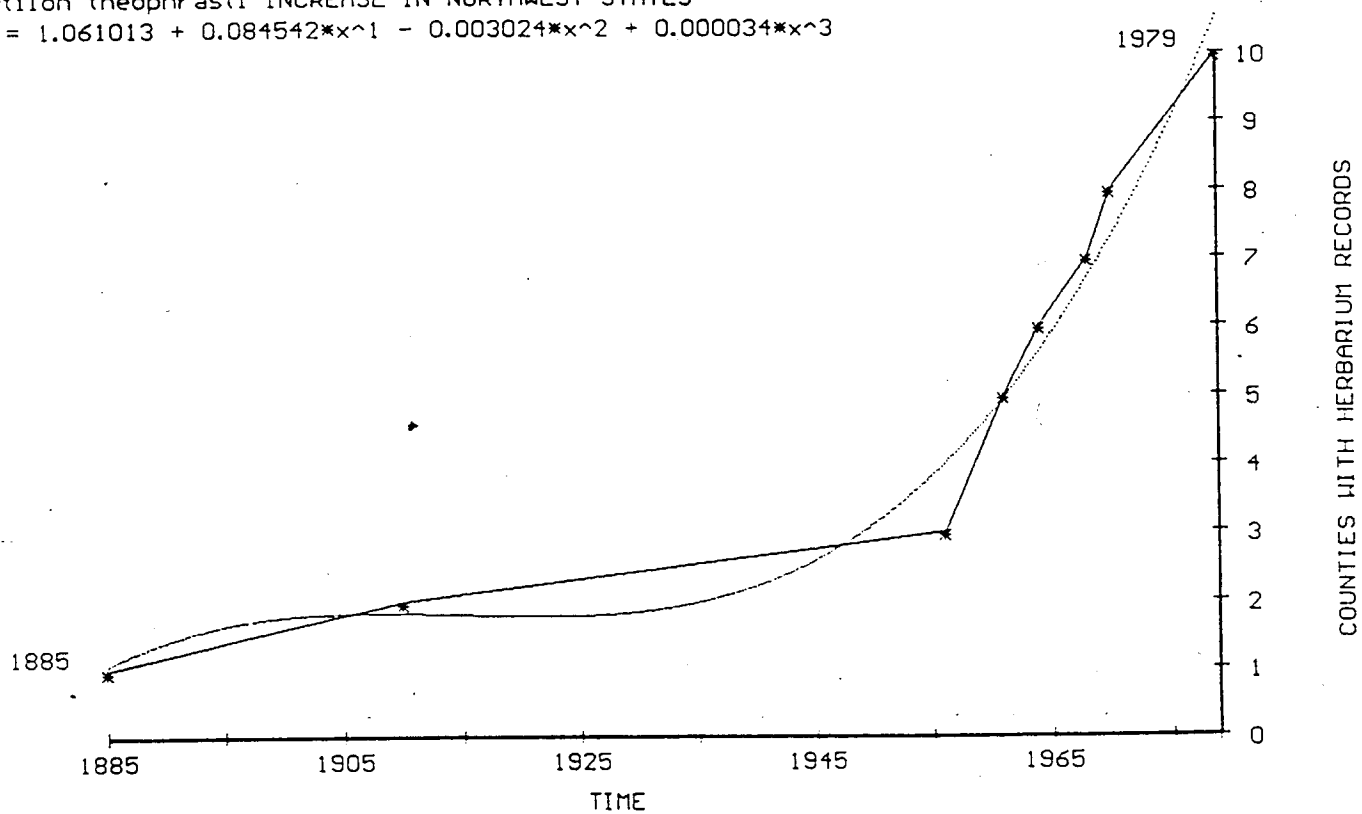
* Numbers rounded to hundreds are estimated number of exotic plant records; others are actual number of usable records.

Counties reporting the exotic *Abutilon theophrasti* (velvetleaf), 1875-1993.

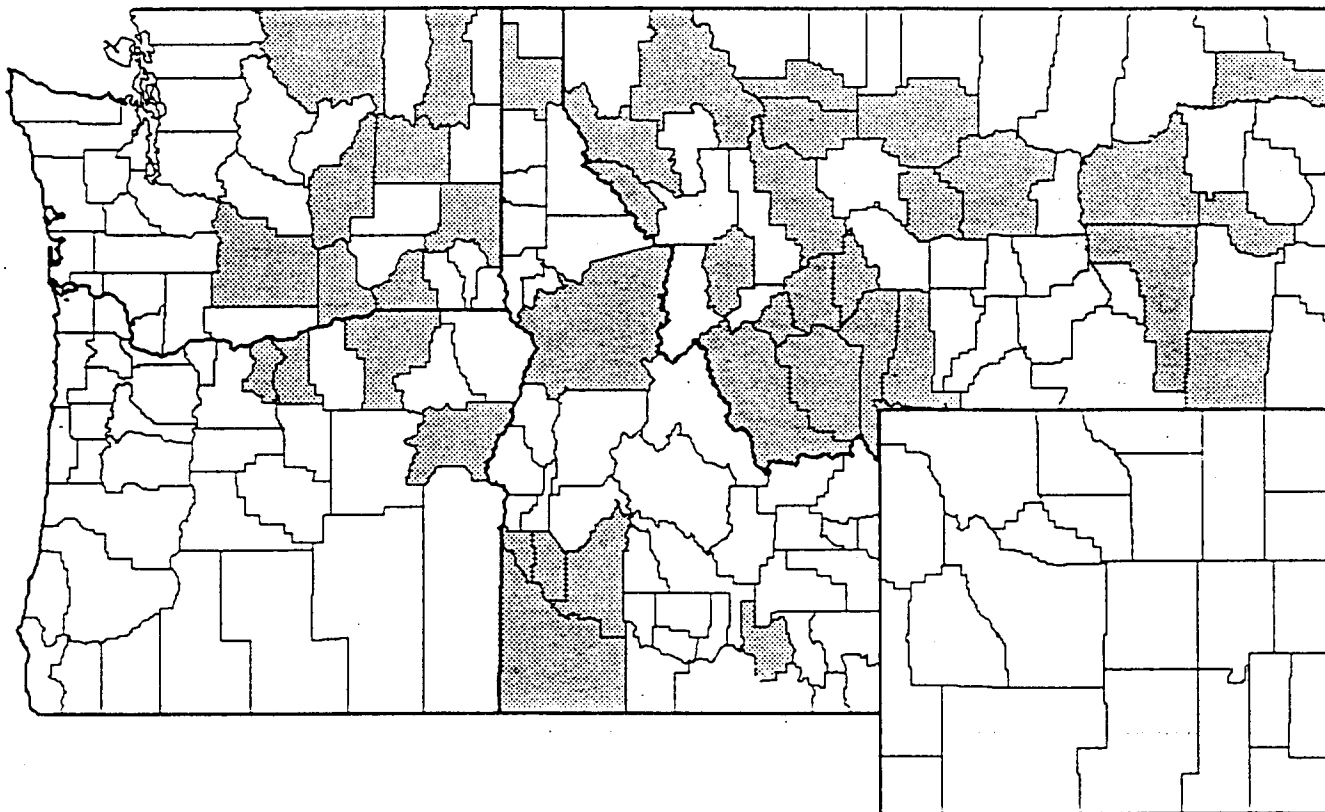


Abutilon theophrasti INCREASE IN NORTHWEST STATES

$$y = 1.061013 + 0.084542 * x^1 - 0.003024 * x^2 + 0.000034 * x^3$$

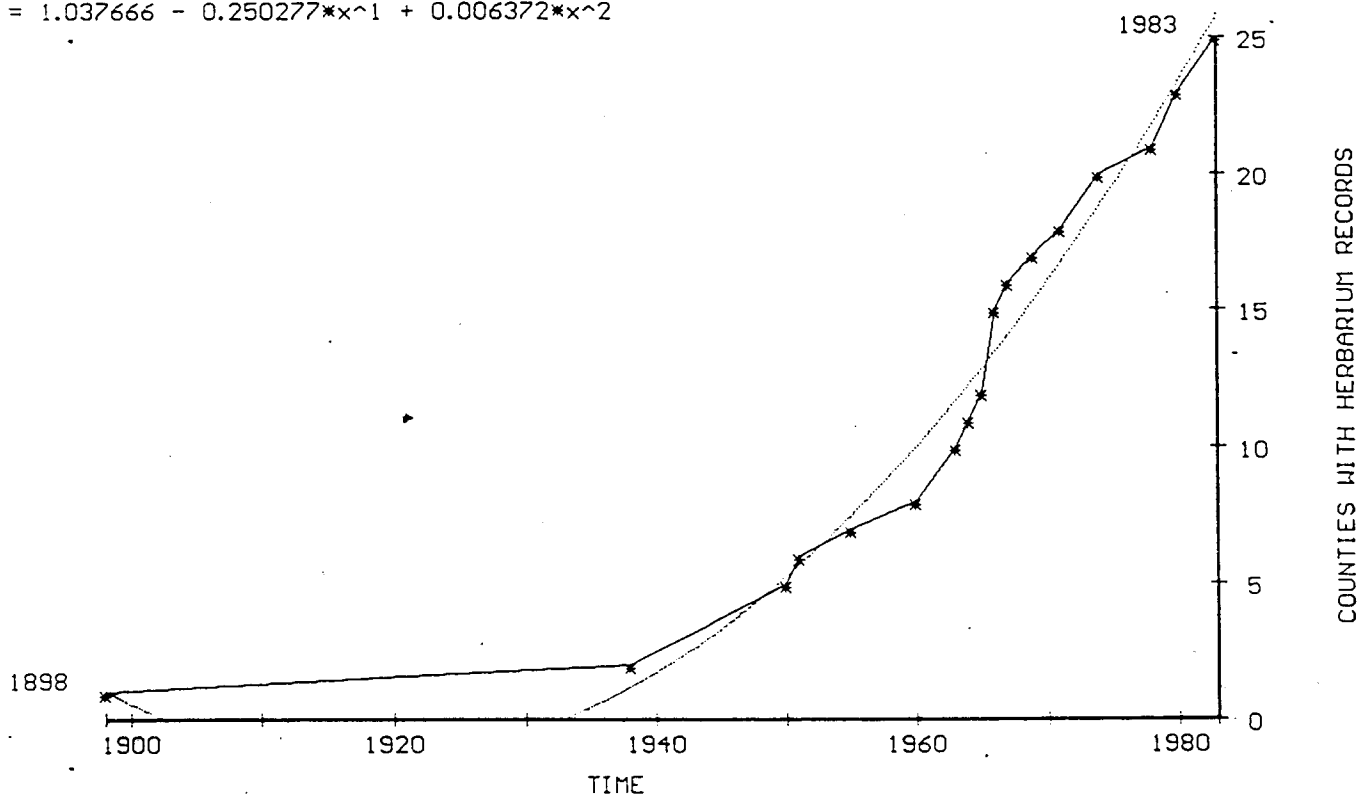


Counties reporting the exotic *Agropyron cristatum* (crested wheatgrass), 1875-1994.

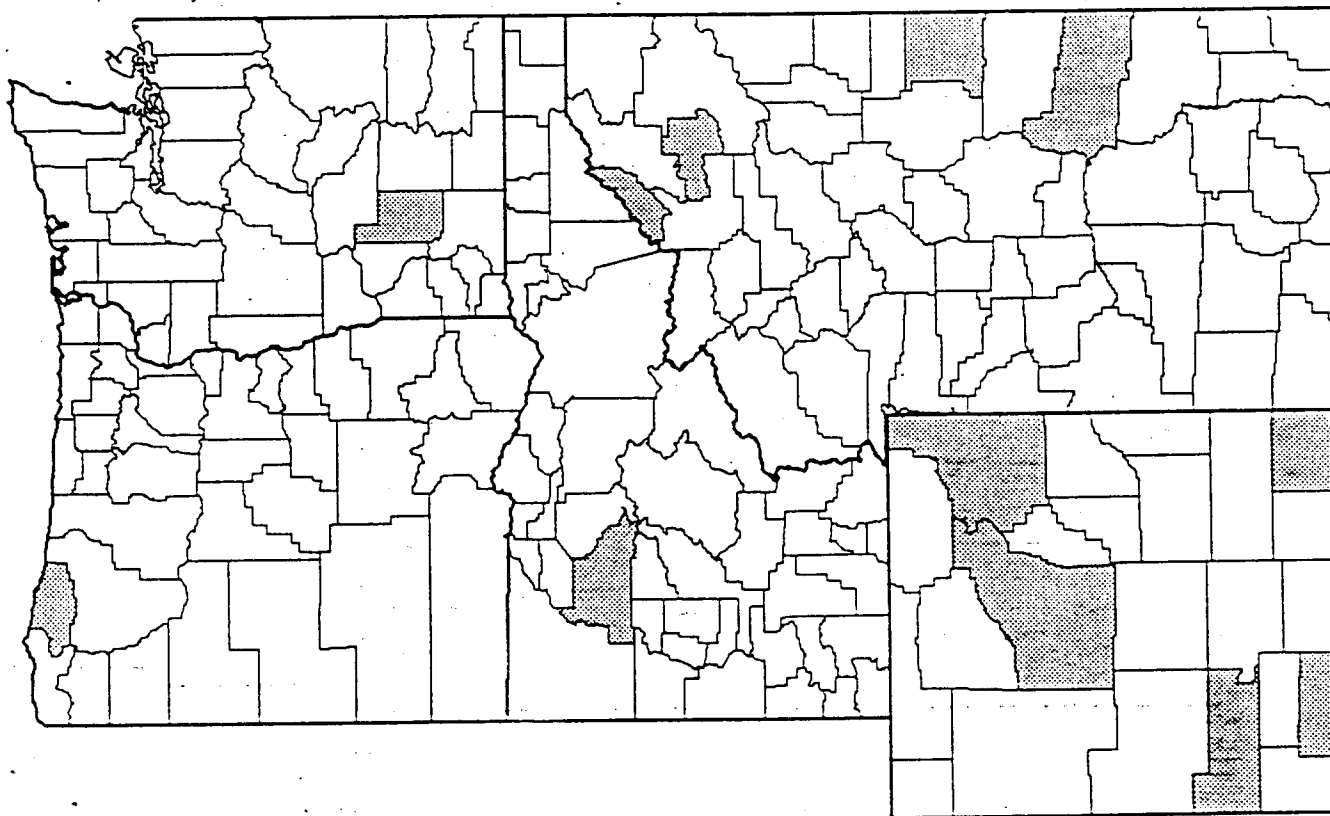


Agropyron cristatum INCREASE IN NORTHWEST STATES

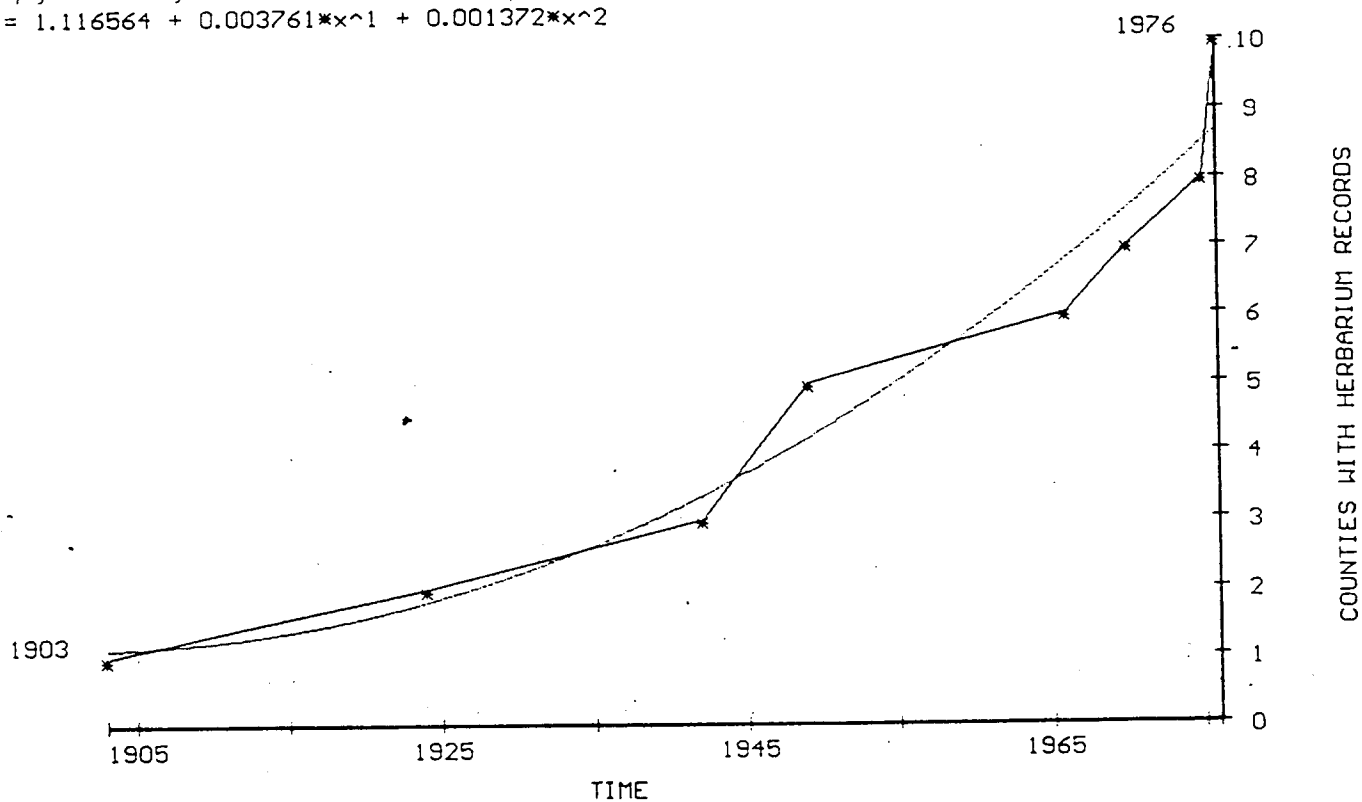
$$y = 1.037666 - 0.250277 \times x^1 + 0.006372 \times x^2$$



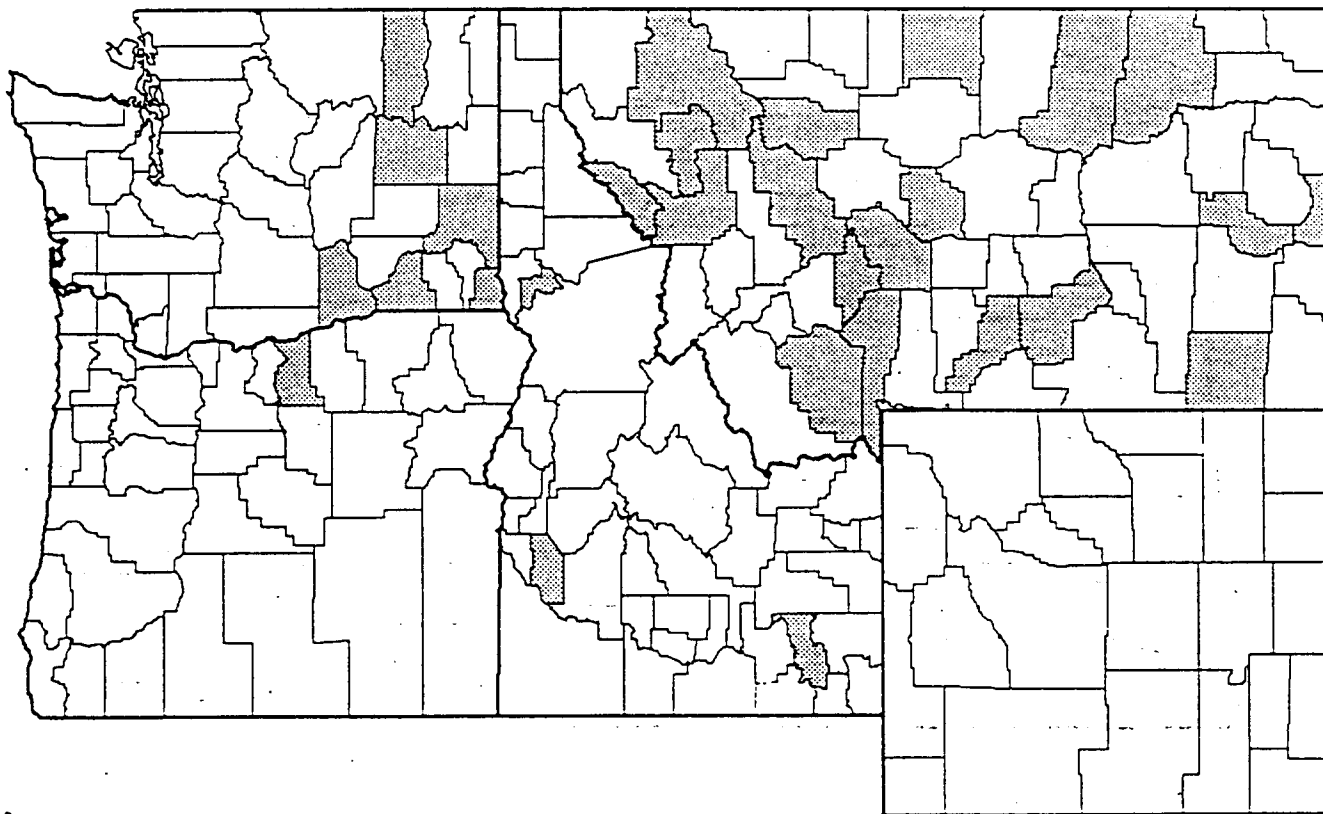
Counties reporting the exotic *Agropyron elongatum* (tall wheatgrass), 1875-1992.



Agropyron elongatum INCREASE IN NORTHWEST STATES
 $y = 1.116564 + 0.003761 * x^1 + 0.001372 * x^2$

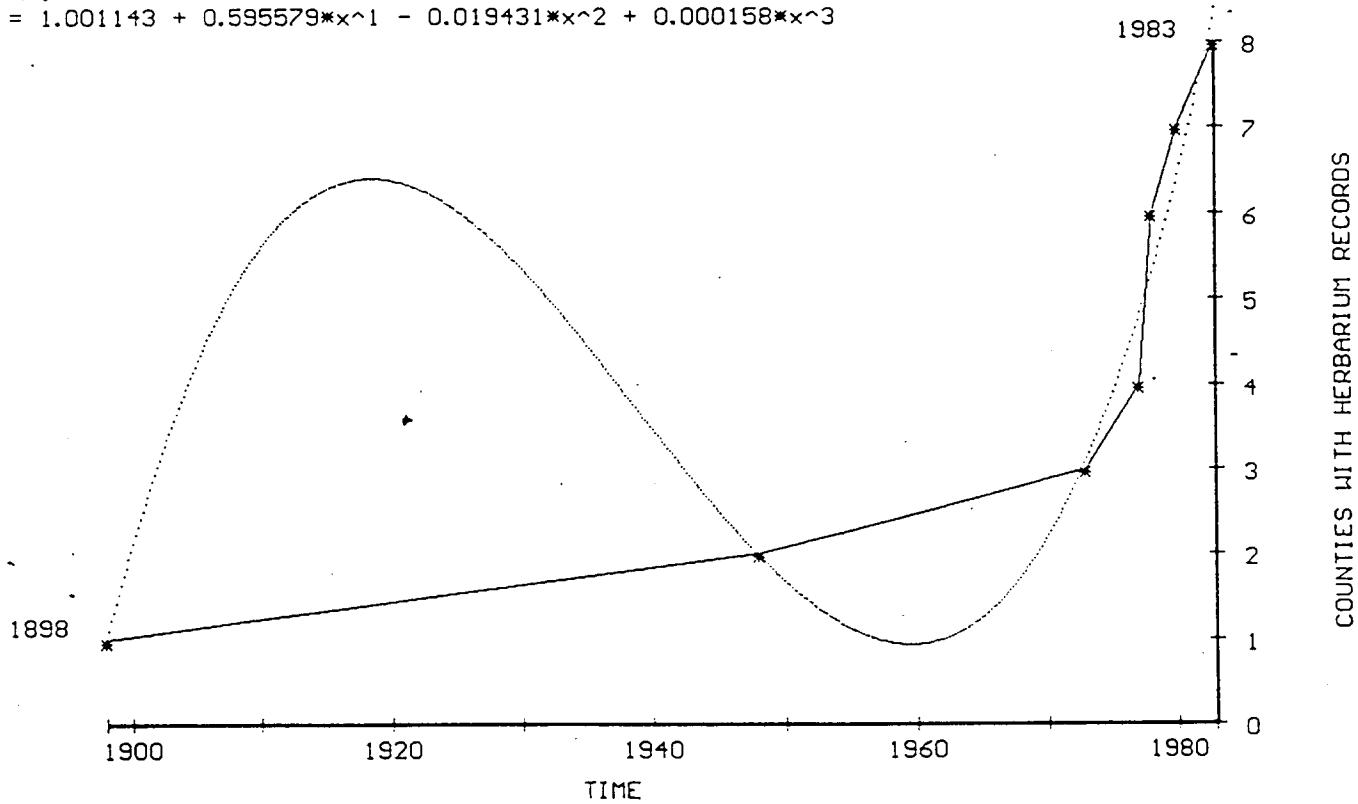


Counties reporting the exotic *Agropyron intermedium* (intermediate wheatgrass), 1875-1994.

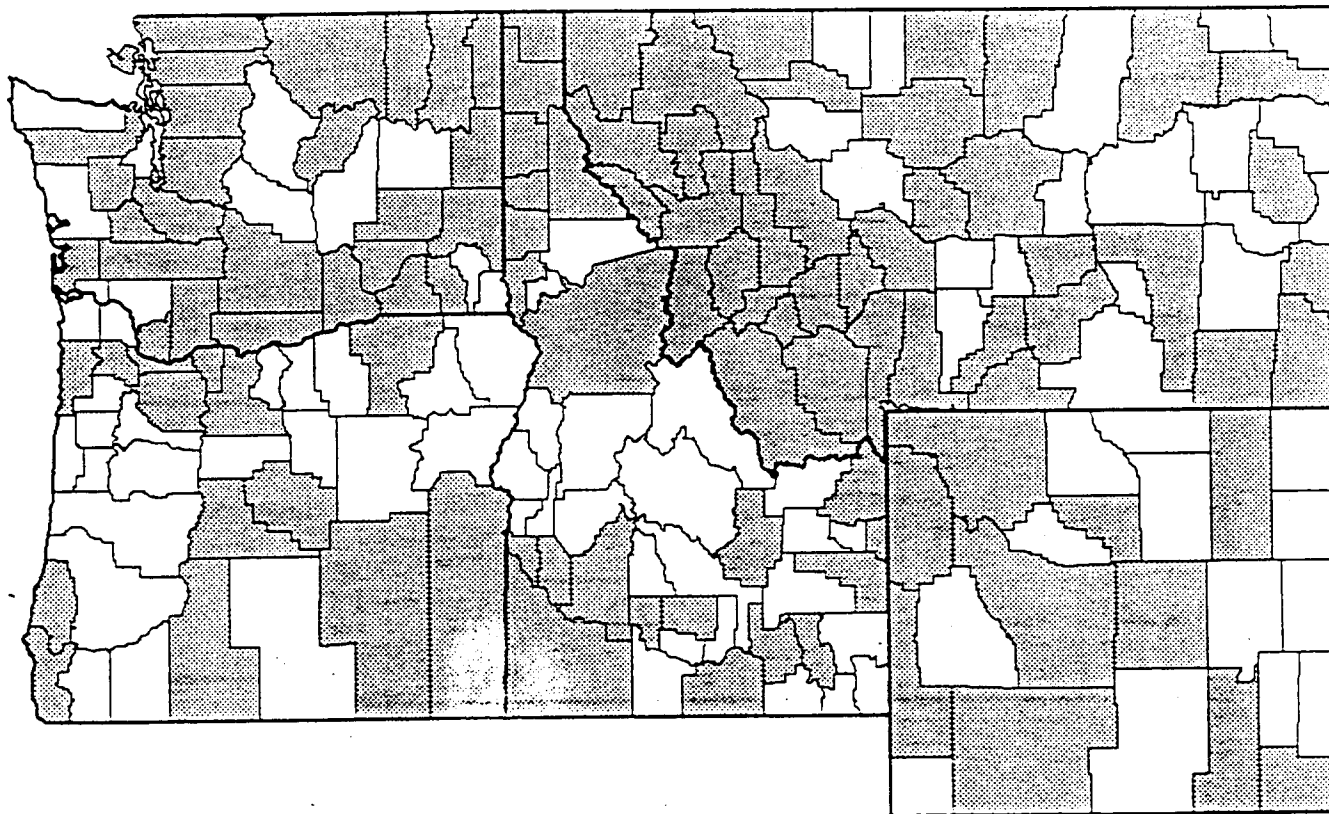


Agropyron intermedium INCREASE IN NORTHWEST STATES

$$y = 1.001143 + 0.595579 * x^1 - 0.019431 * x^2 + 0.000158 * x^3$$

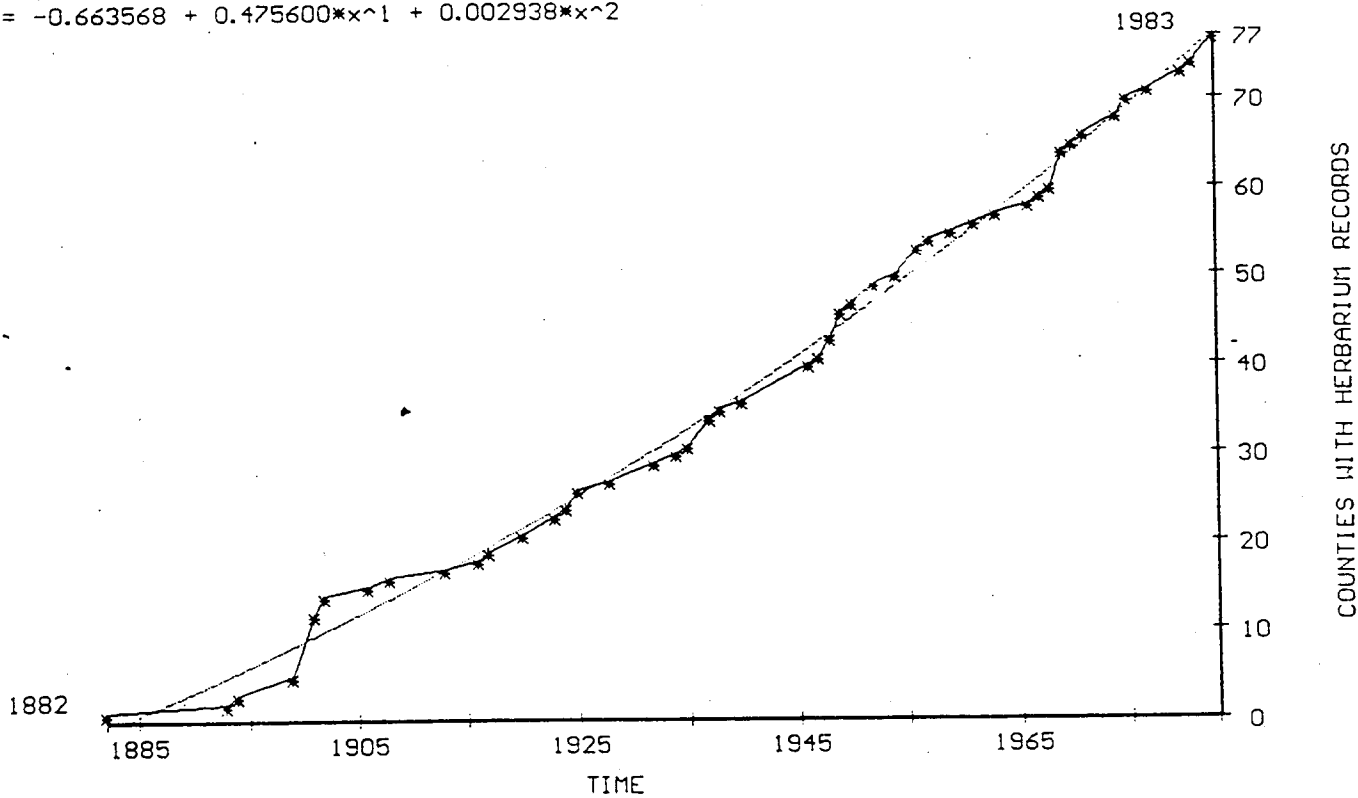


Counties reporting the exotic *Agropyron repens* (quackgrass), 1875-1994.

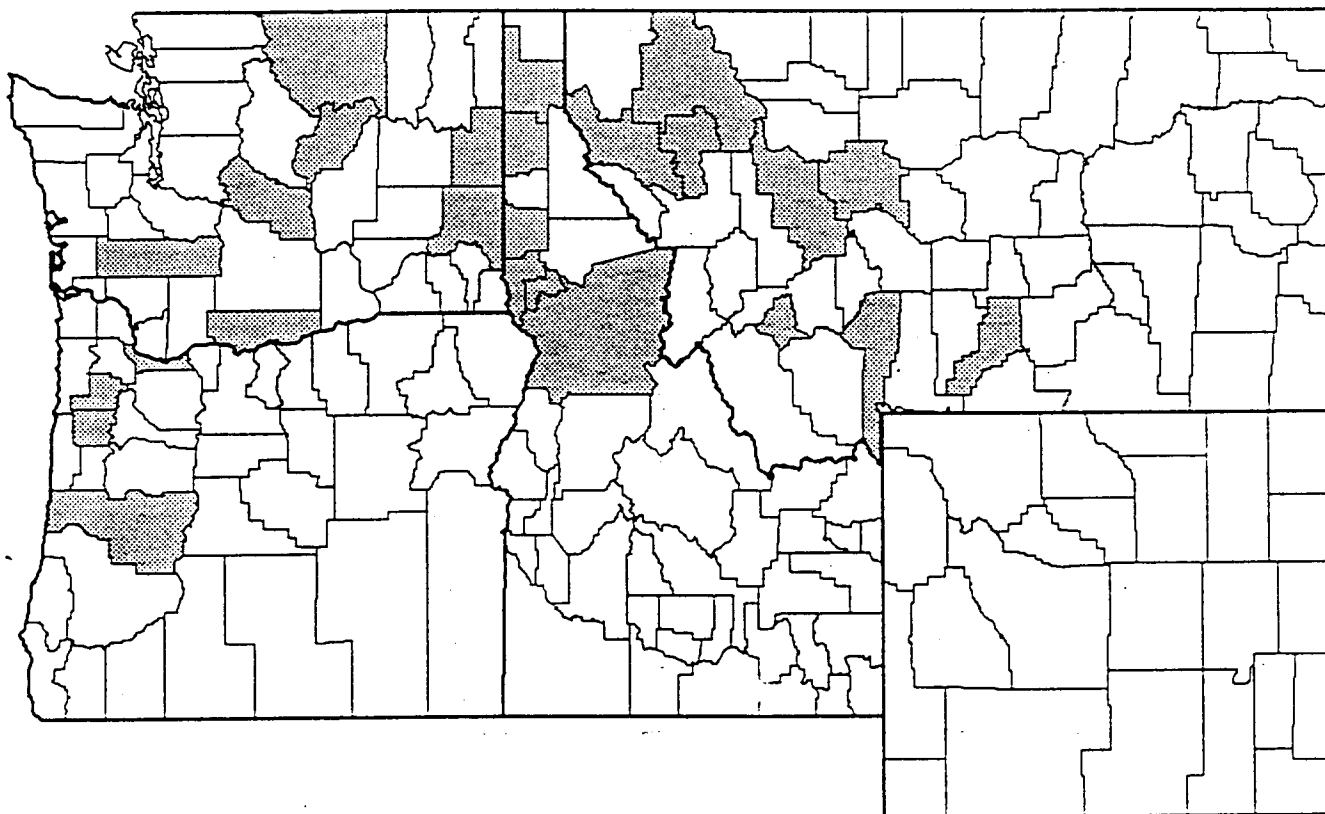


Agropyron repens INCREASE IN NORTHWEST STATES

$$y = -0.663568 + 0.475600 * x^1 + 0.002938 * x^2$$

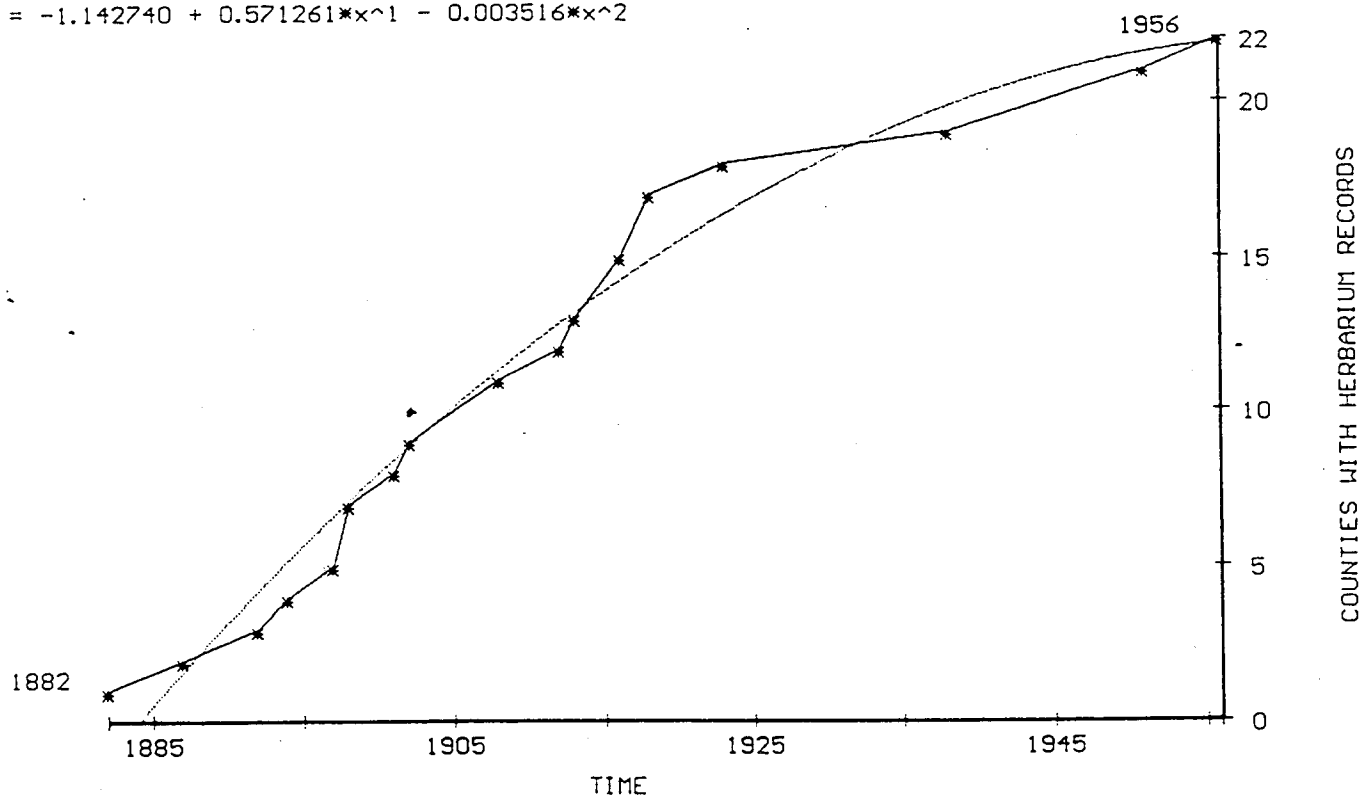


Counties reporting the exotic *Agrostemma githago* (corn cockle), 1875-1980.

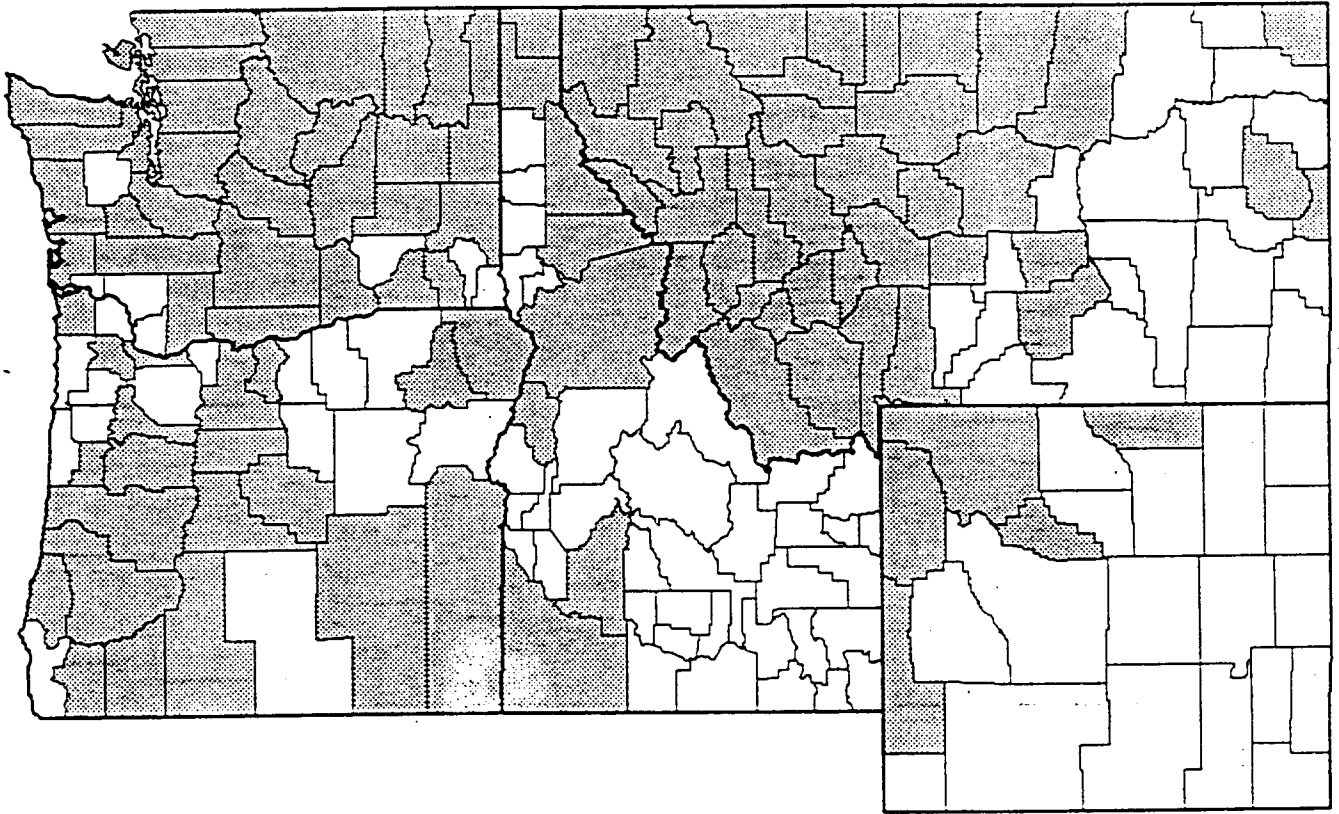


Agrostemma githago INCREASE IN NORTHWEST STATES

$$y = -1.142740 + 0.571261 \cdot x^1 - 0.003516 \cdot x^2$$

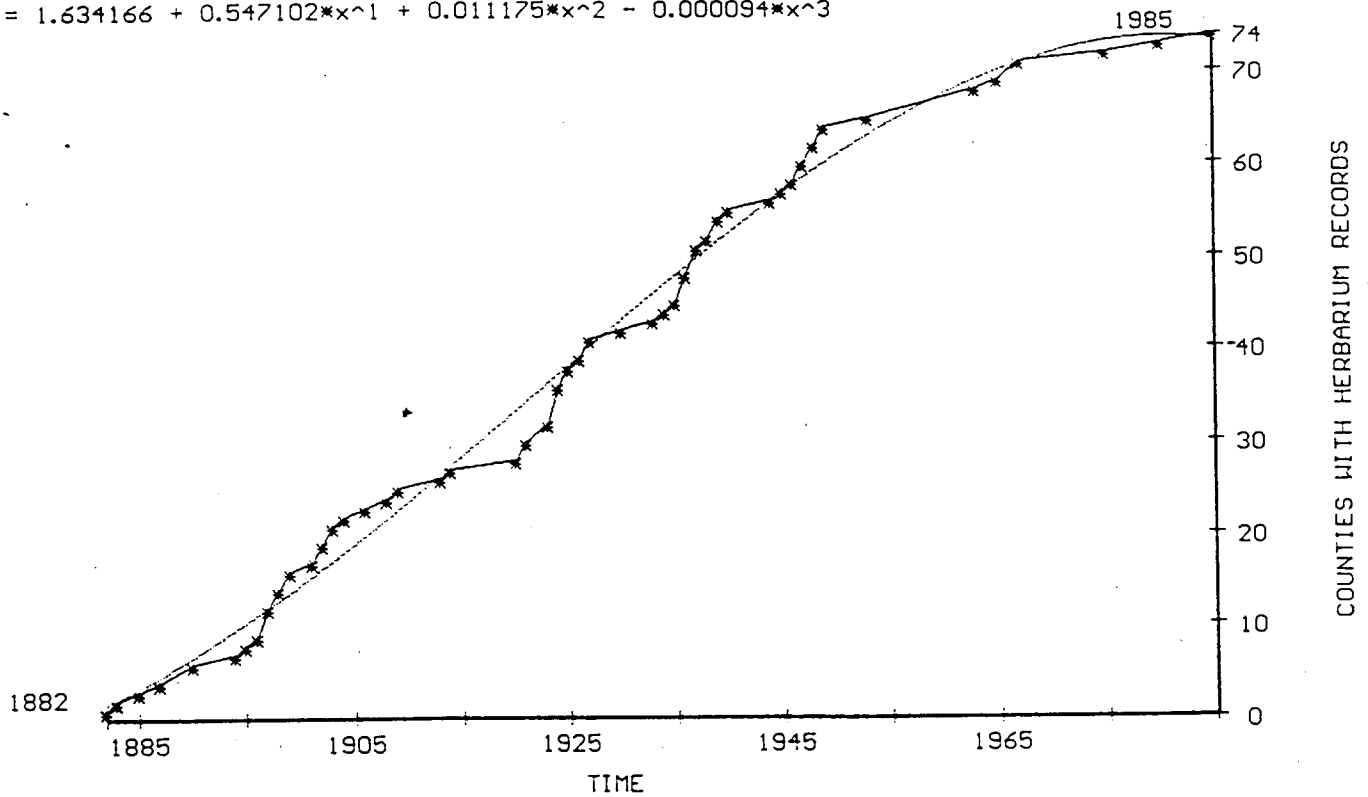


Counties reporting the exotic *Agrostis stolonifera* (creeping bentgrass), 1875-1993.

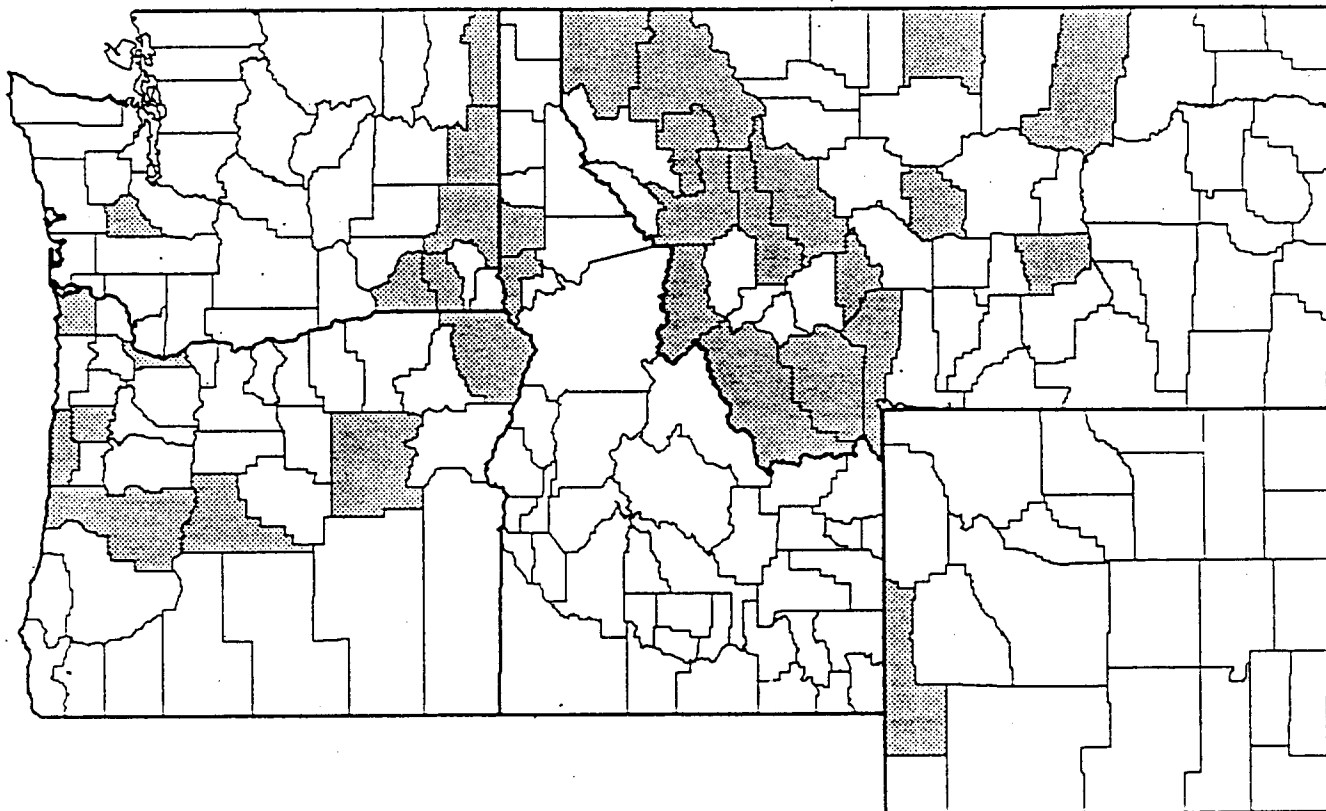


Agrostis stolonifera INCREASE IN NORTHWEST STATES

$$y = 1.634166 + 0.547102 * x^1 + 0.011175 * x^2 - 0.000094 * x^3$$

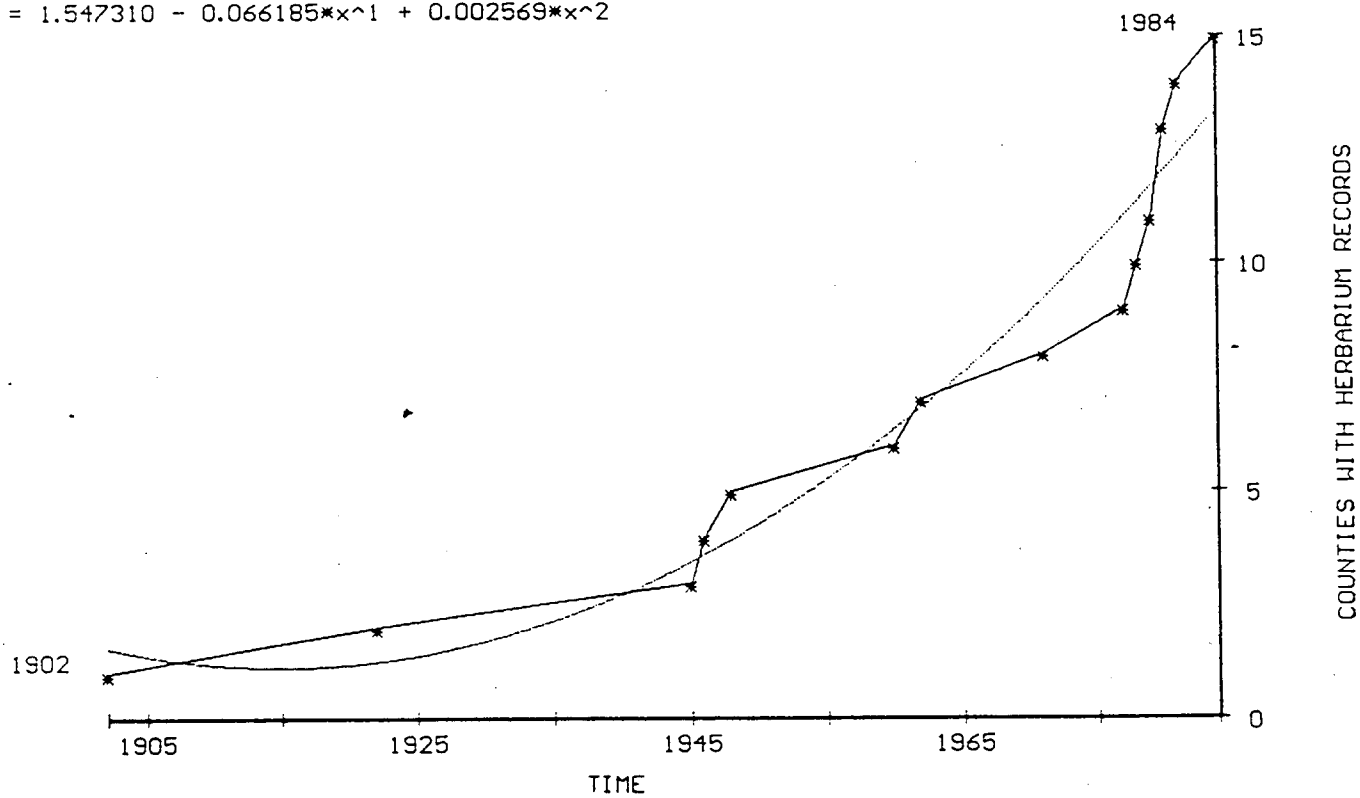


Counties reporting the exotic *Alopecurus pratensis* (meadow foxtail), 1875-1993.

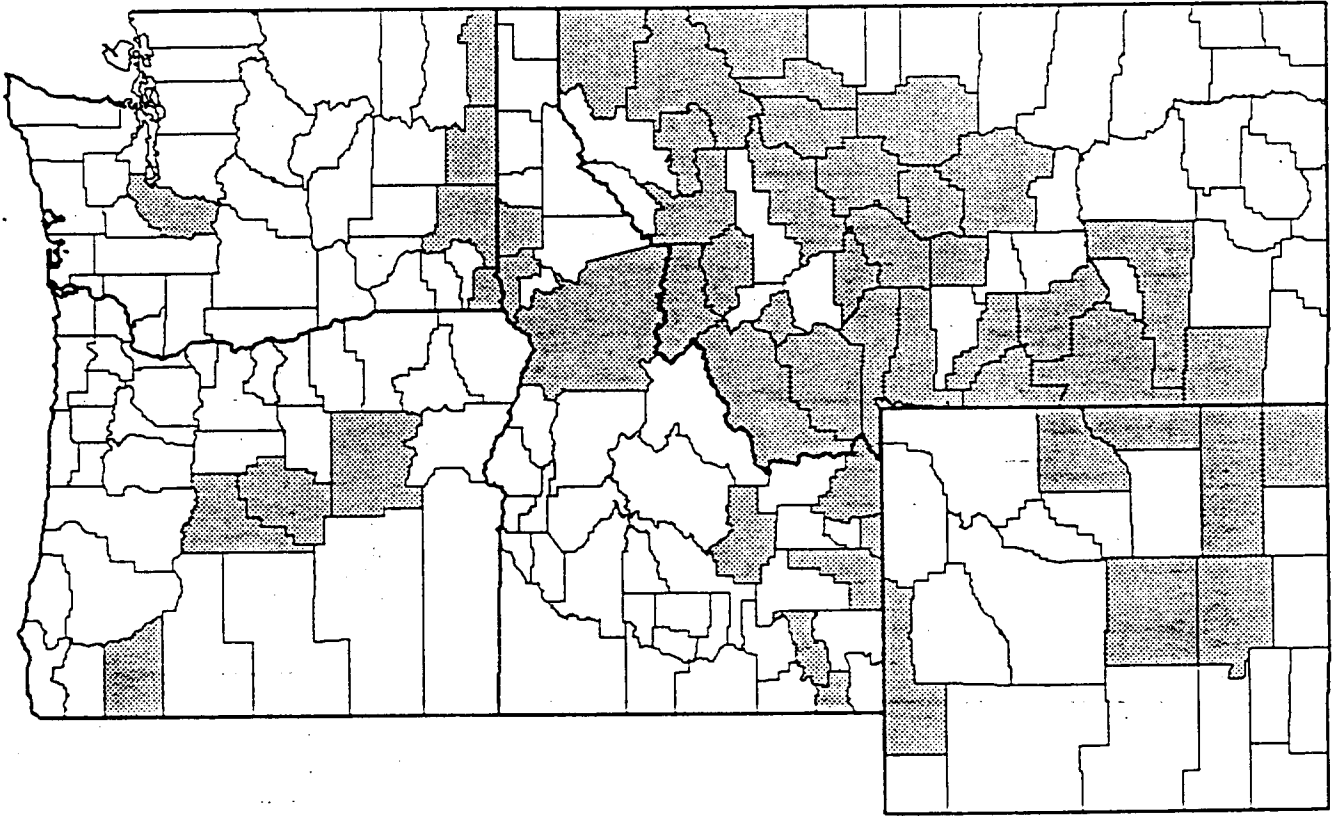


Alopecurus pratensis INCREASE IN NORTHWEST STATES

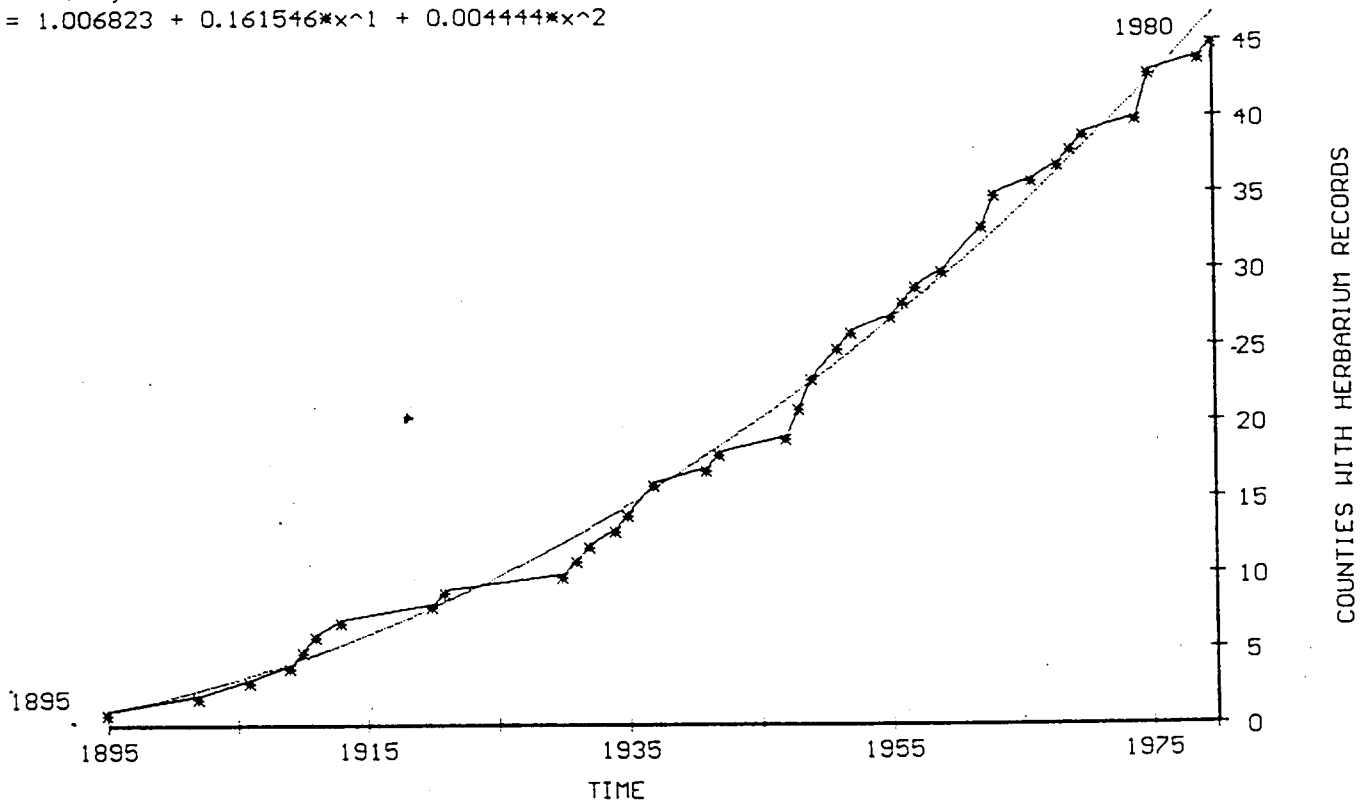
$$y = 1.547310 - 0.066185 * x^1 + 0.002569 * x^2$$



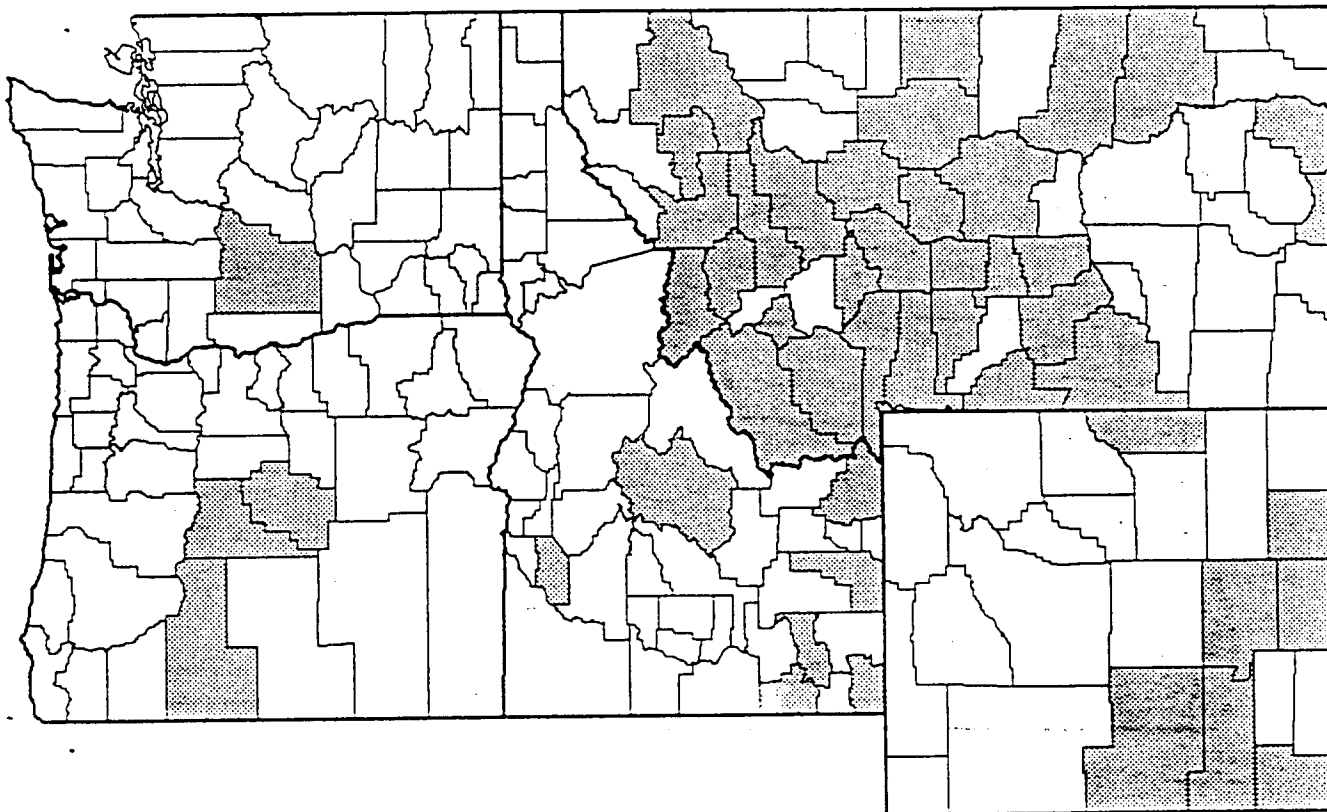
Counties reporting the exotic *Alyssum alyssoides* (yellow alyssum), 1875-1993.



Alyssum alyssoides INCREASE IN NORTHWEST STATES
 $y = 1.006823 + 0.161546 * x^1 + 0.004444 * x^2$

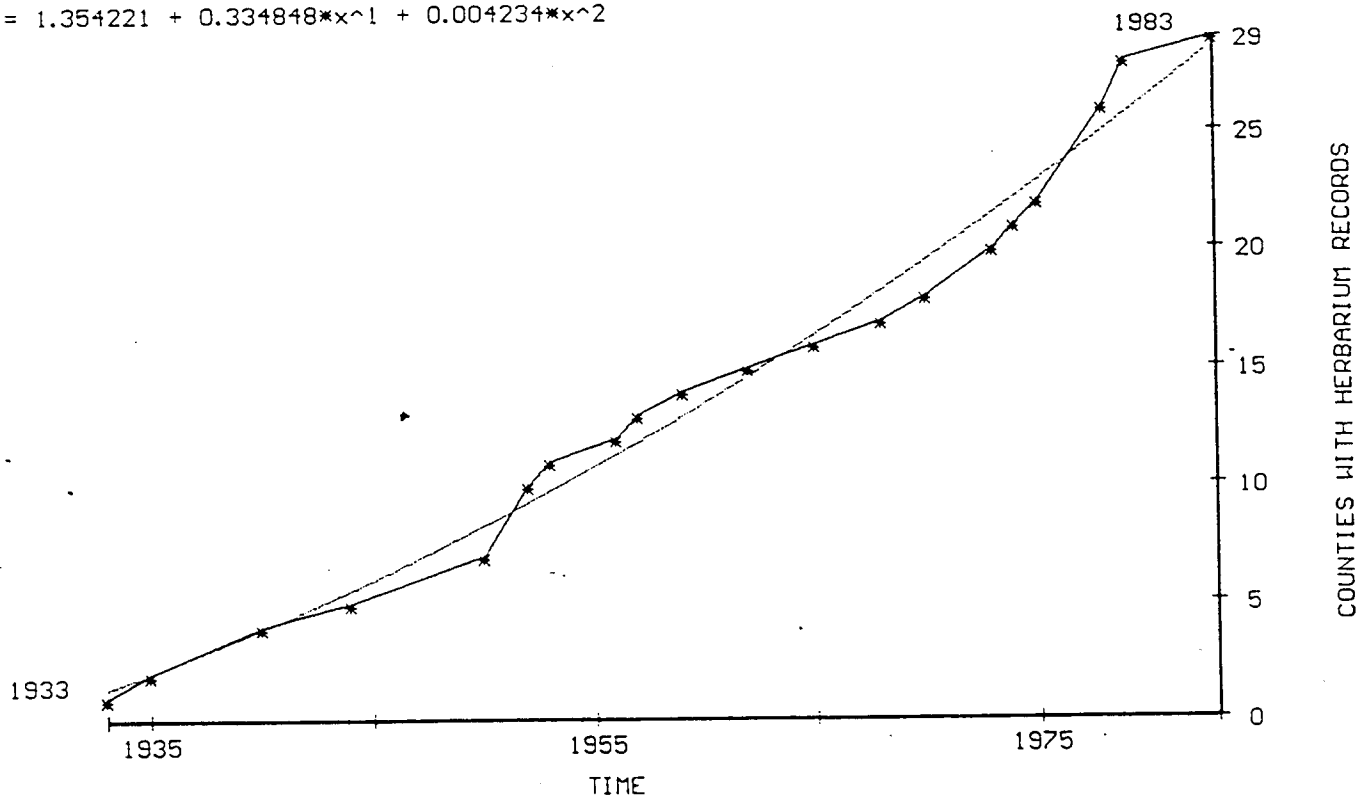


Counties reporting the exotic *Alyssum desertorum* (dwarf alyssum), 1875-1993.

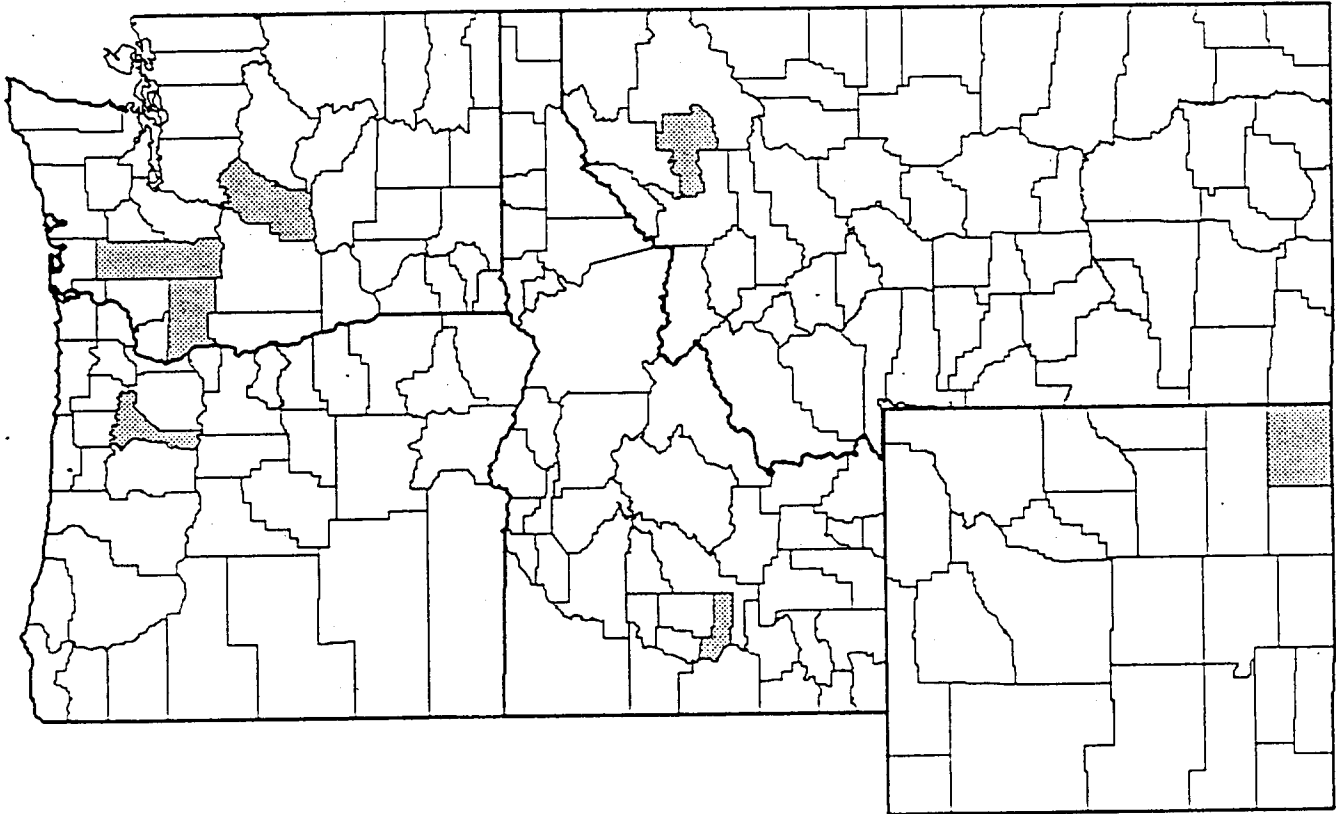


Alyssum desertorum INCREASE IN NORTHWEST STATES

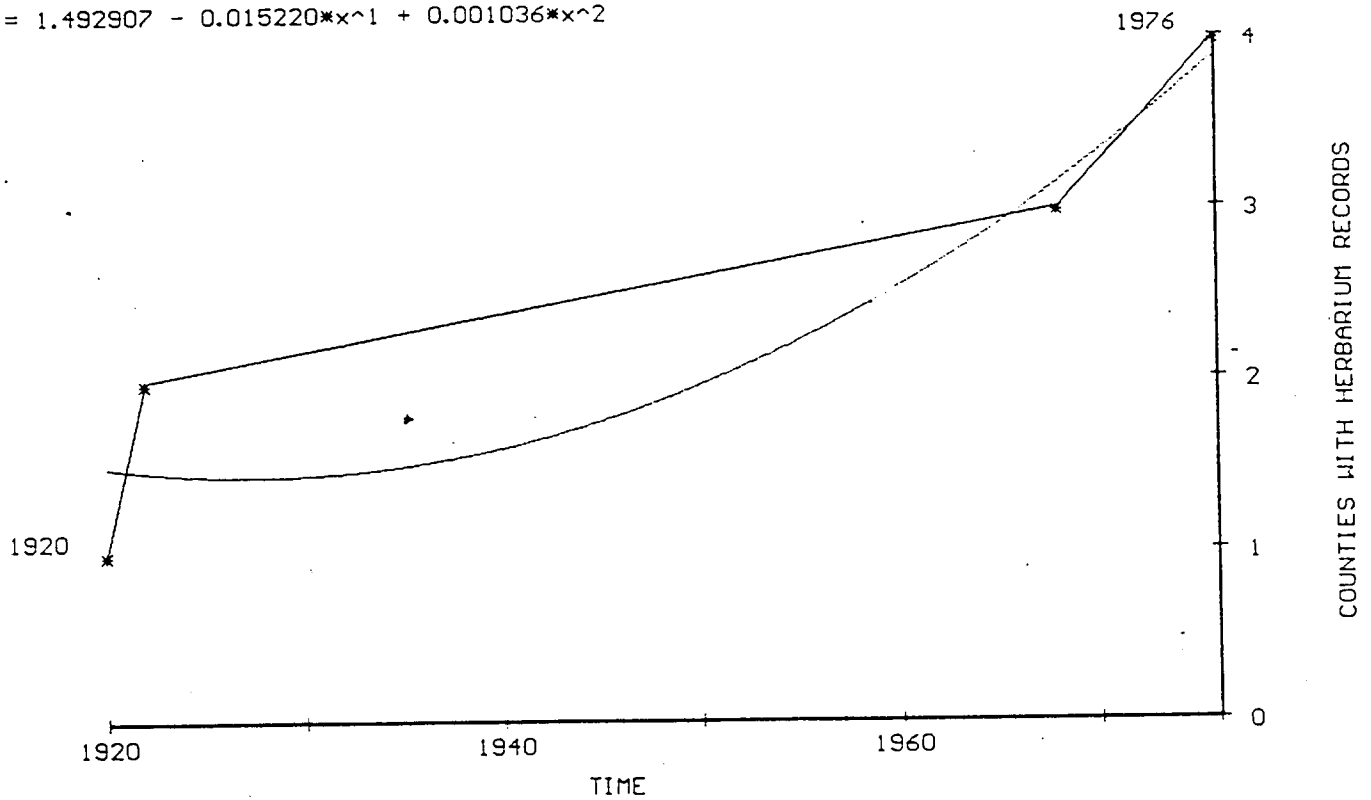
$$y = 1.354221 + 0.334848 * x^1 + 0.004234 * x^2$$



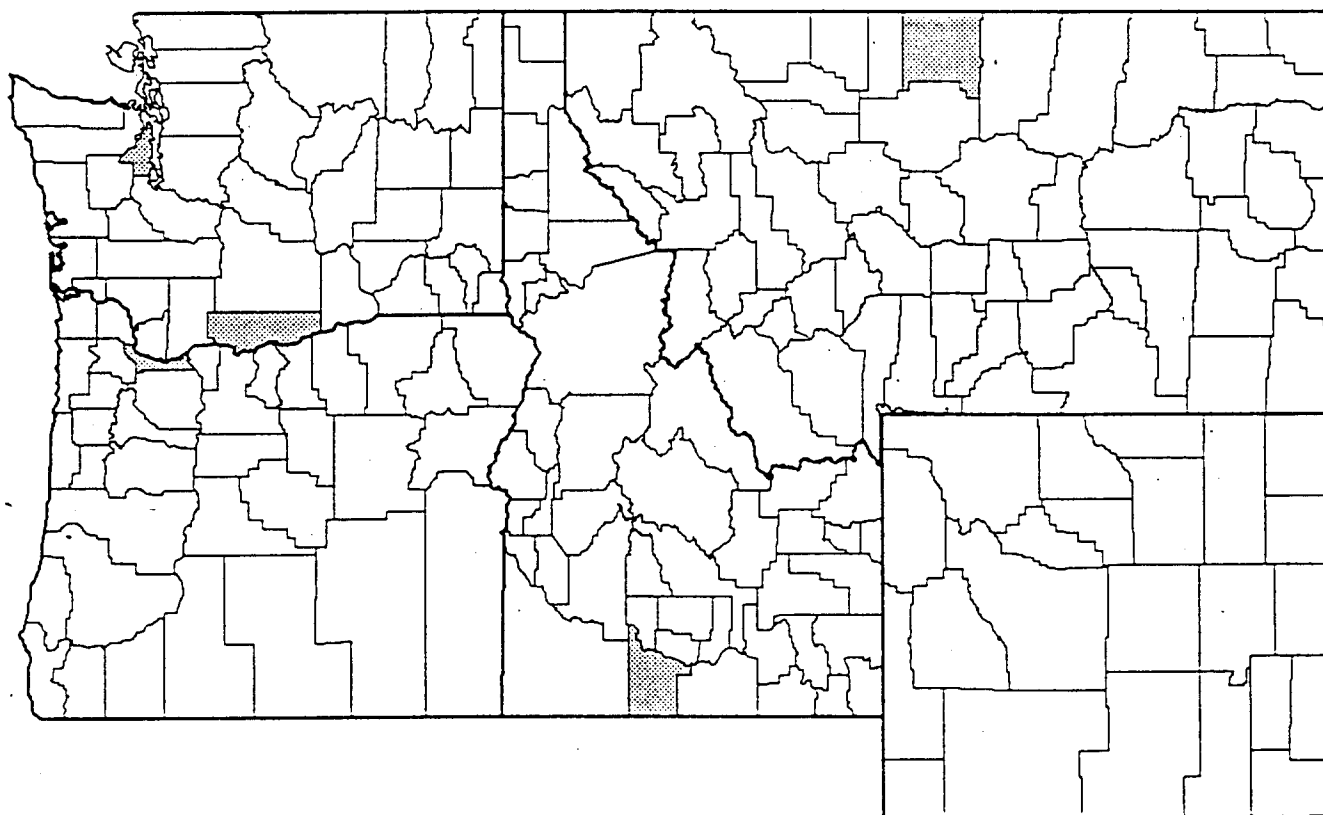
Counties reporting the exotic *Althaea rosea* (hollyhock), 1875-1992.



Althaea rosea INCREASE IN NORTHWEST STATES
 $y = 1.492907 - 0.015220 * x^1 + 0.001036 * x^2$

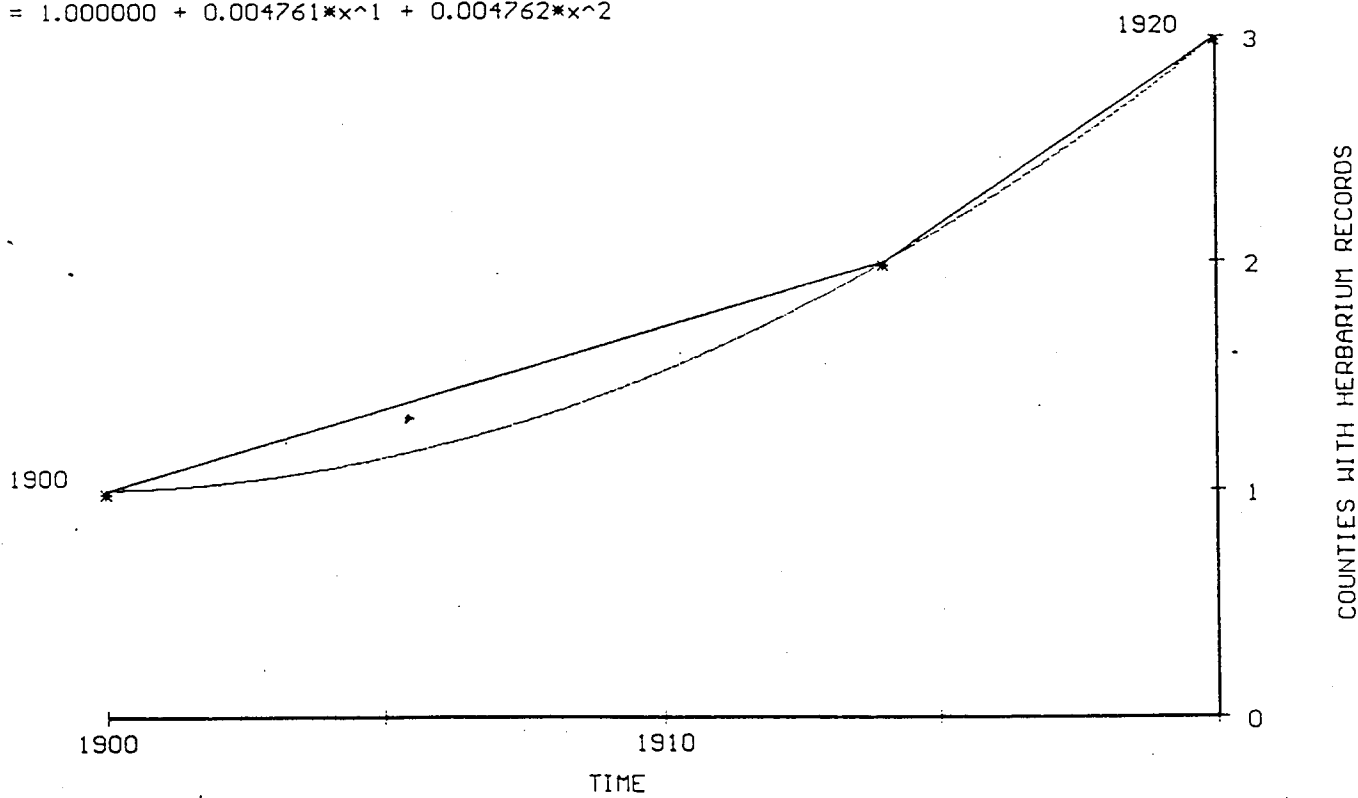


Counties reporting the exotic *Amaranthus caudatus* (tasselflower), 1875-1993.

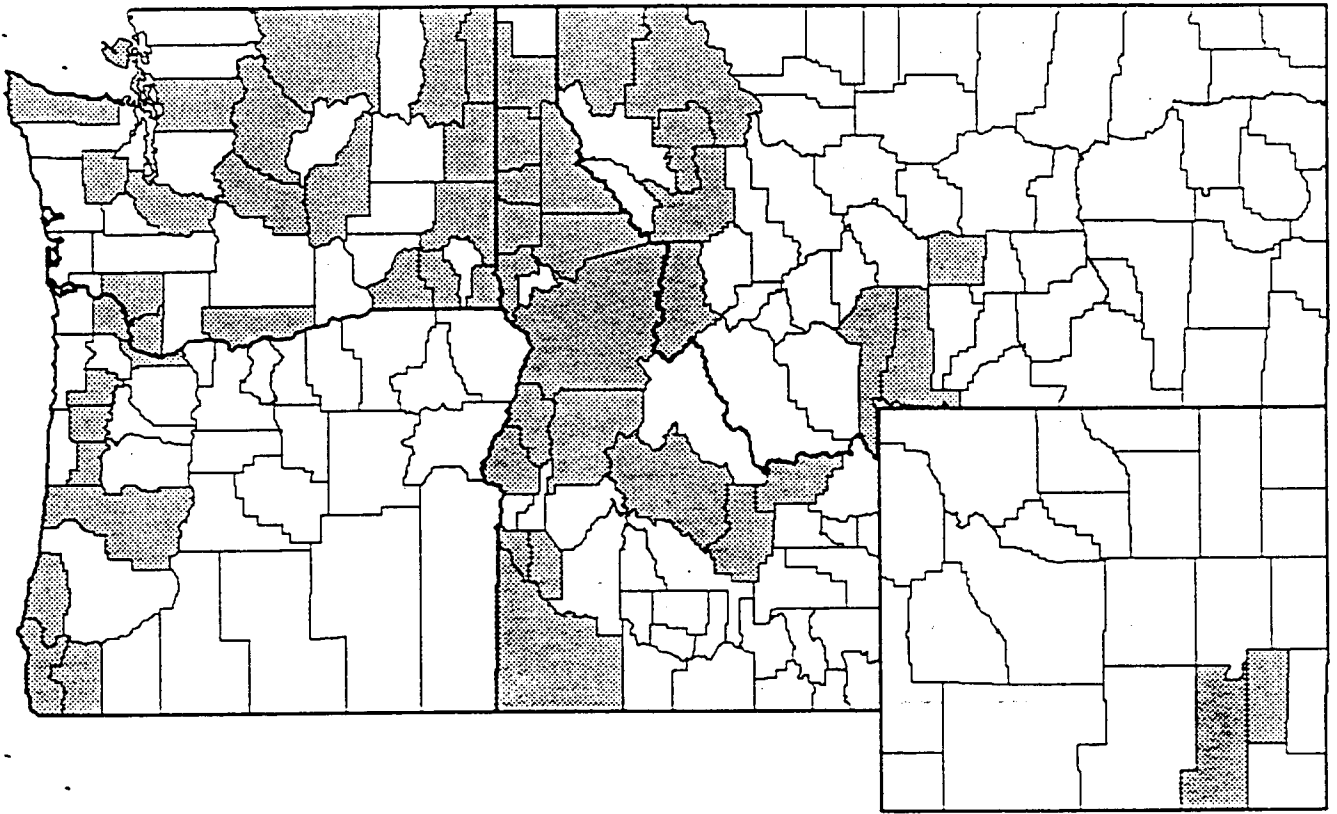


Amaranthus caudatus INCREASE IN NORTHWEST STATES

$$y = 1.000000 + 0.004761 * x^1 + 0.004762 * x^2$$

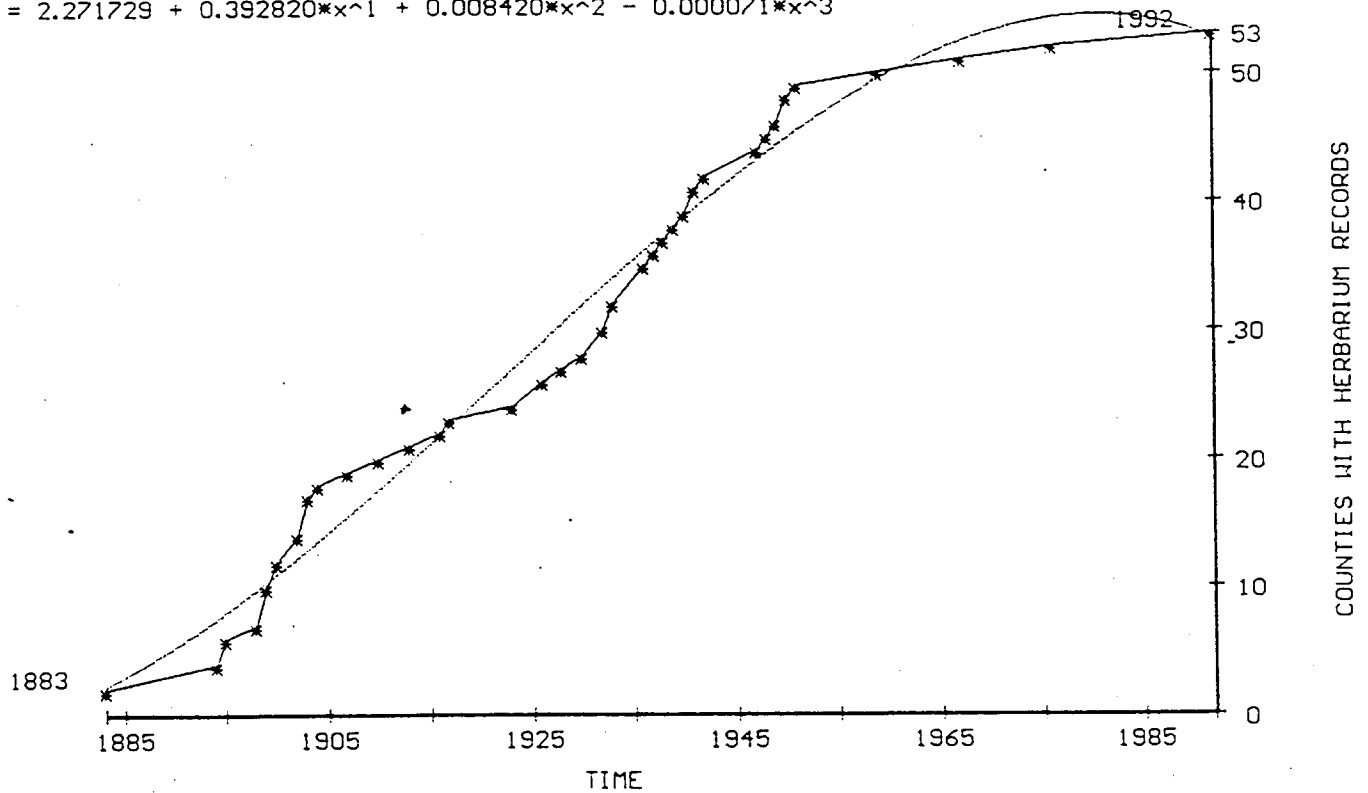


Counties reporting the exotic *Anthemis cotula* (mayweed chamomile), 1875-1993.

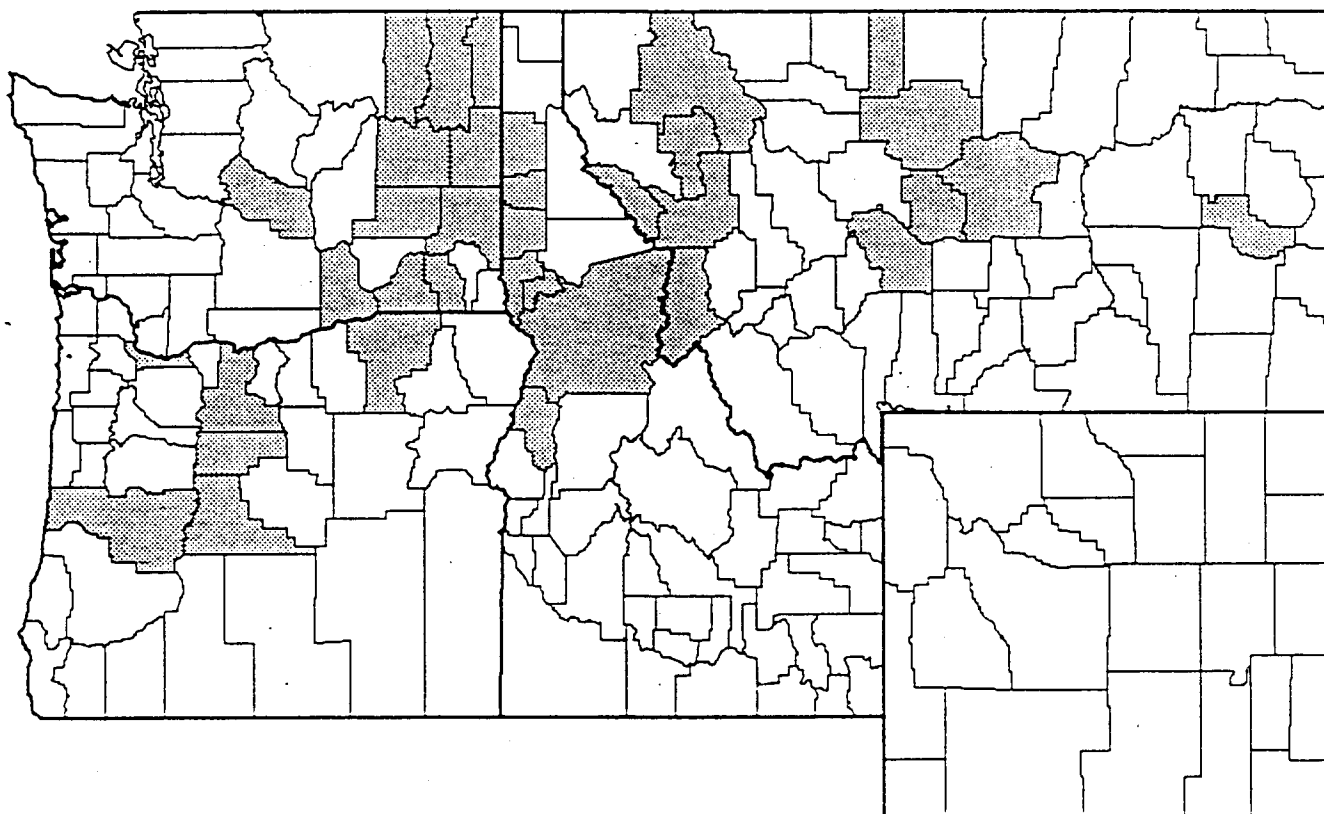


Anthemis cotula INCREASE IN NORTHWEST STATES

$$y = 2.271729 + 0.392820 \cdot x^1 + 0.008420 \cdot x^2 - 0.000071 \cdot x^3$$

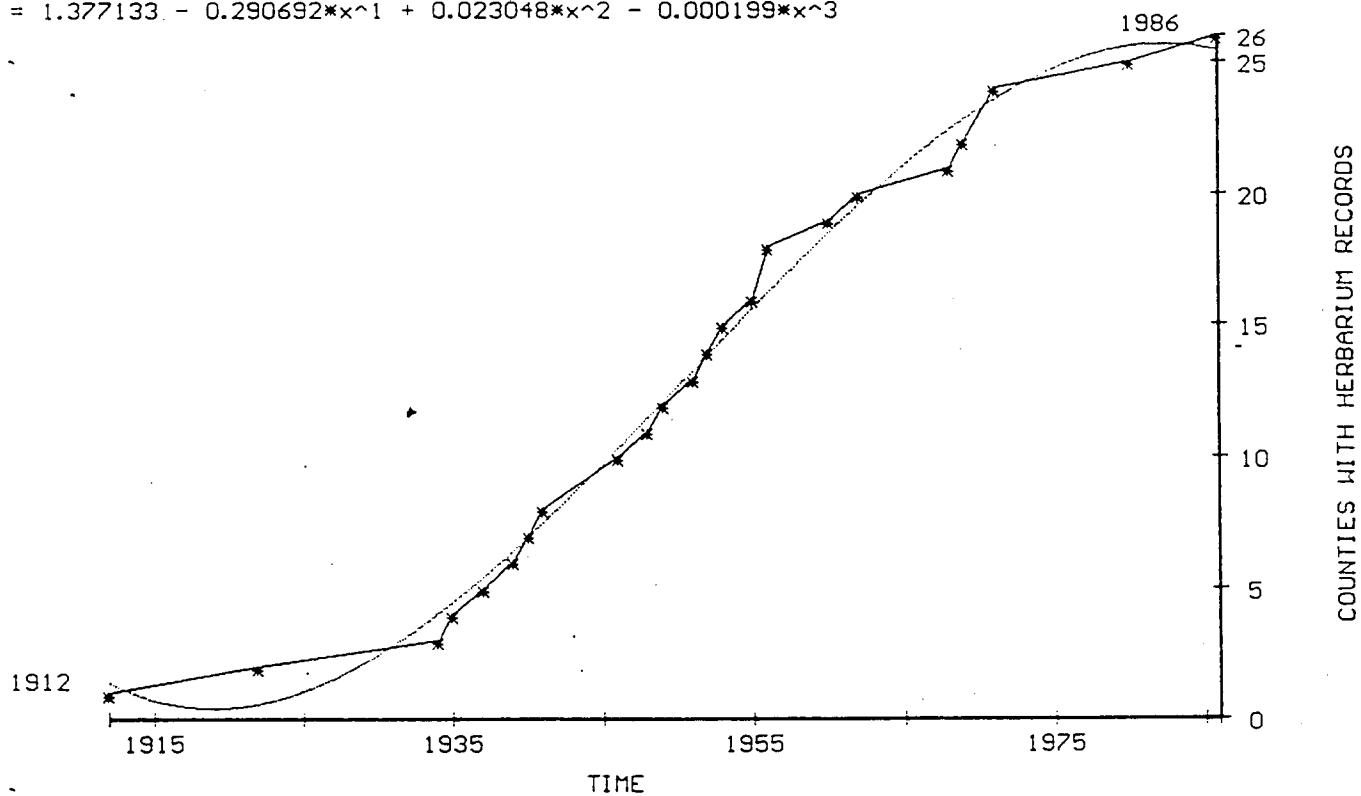


Counties reporting the exotic *Apera interrupta* (interrupted apera), 1875-1994.

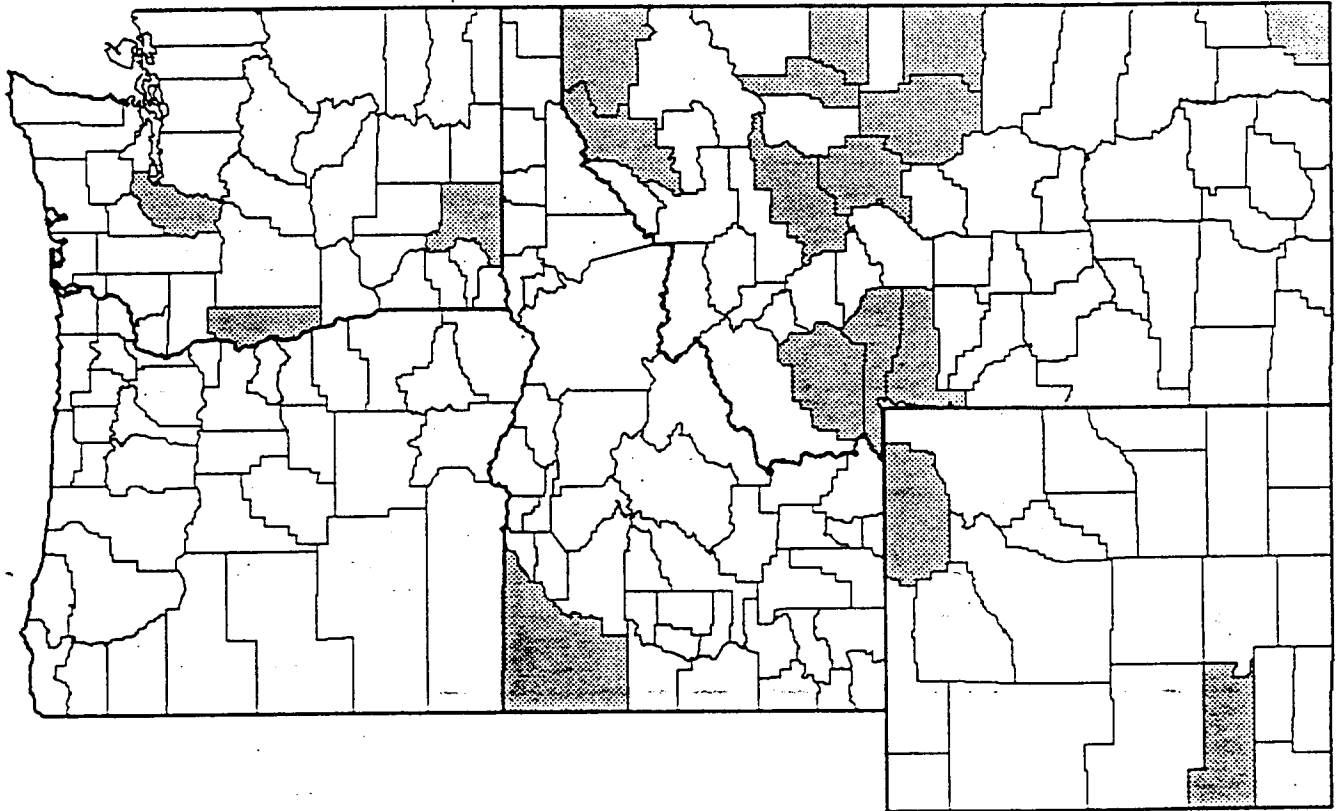


Apera interrupta INCREASE IN NORTHWEST STATES

$$y = 1.377133 - 0.290692 * x^1 + 0.023048 * x^2 - 0.000199 * x^3$$

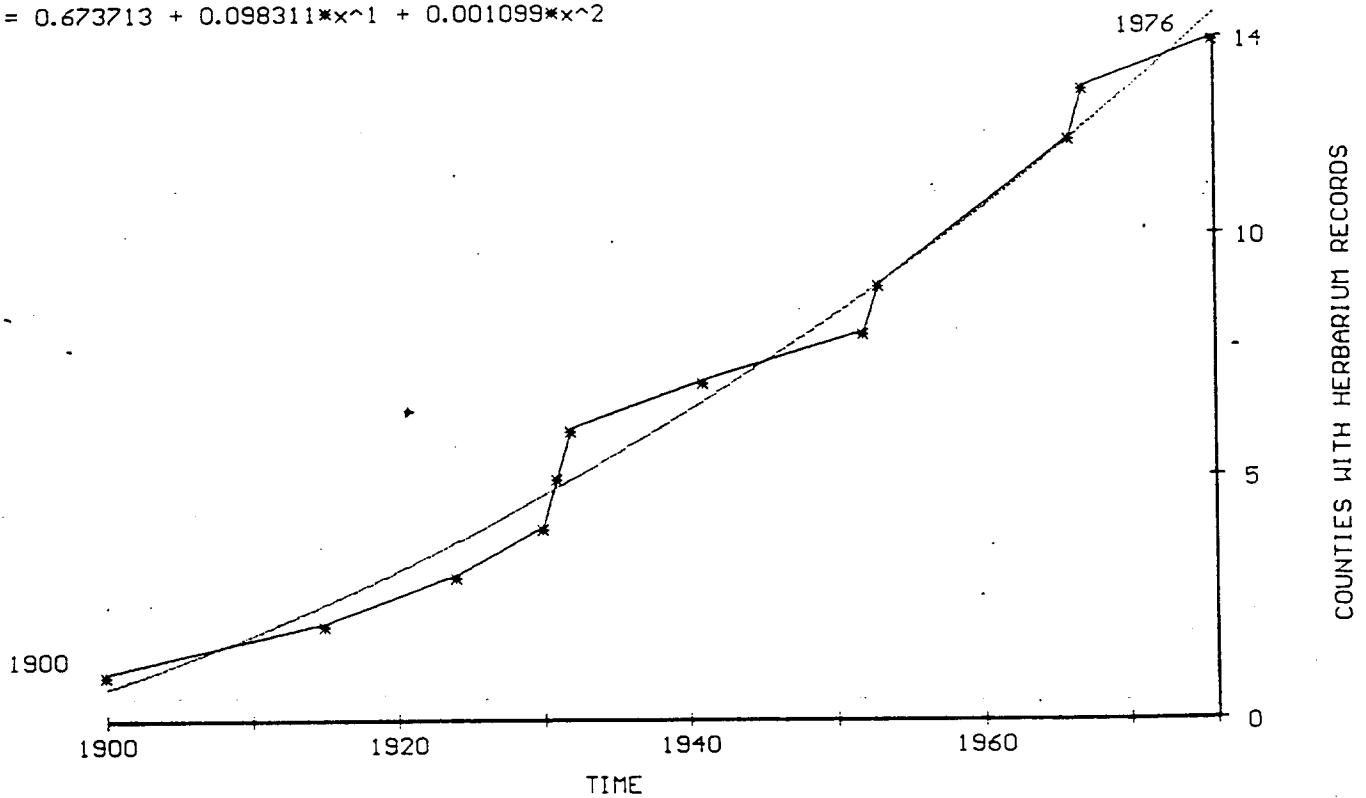


Counties reporting the exotic *Arctium lappa* (great burdock), 1875-1990.

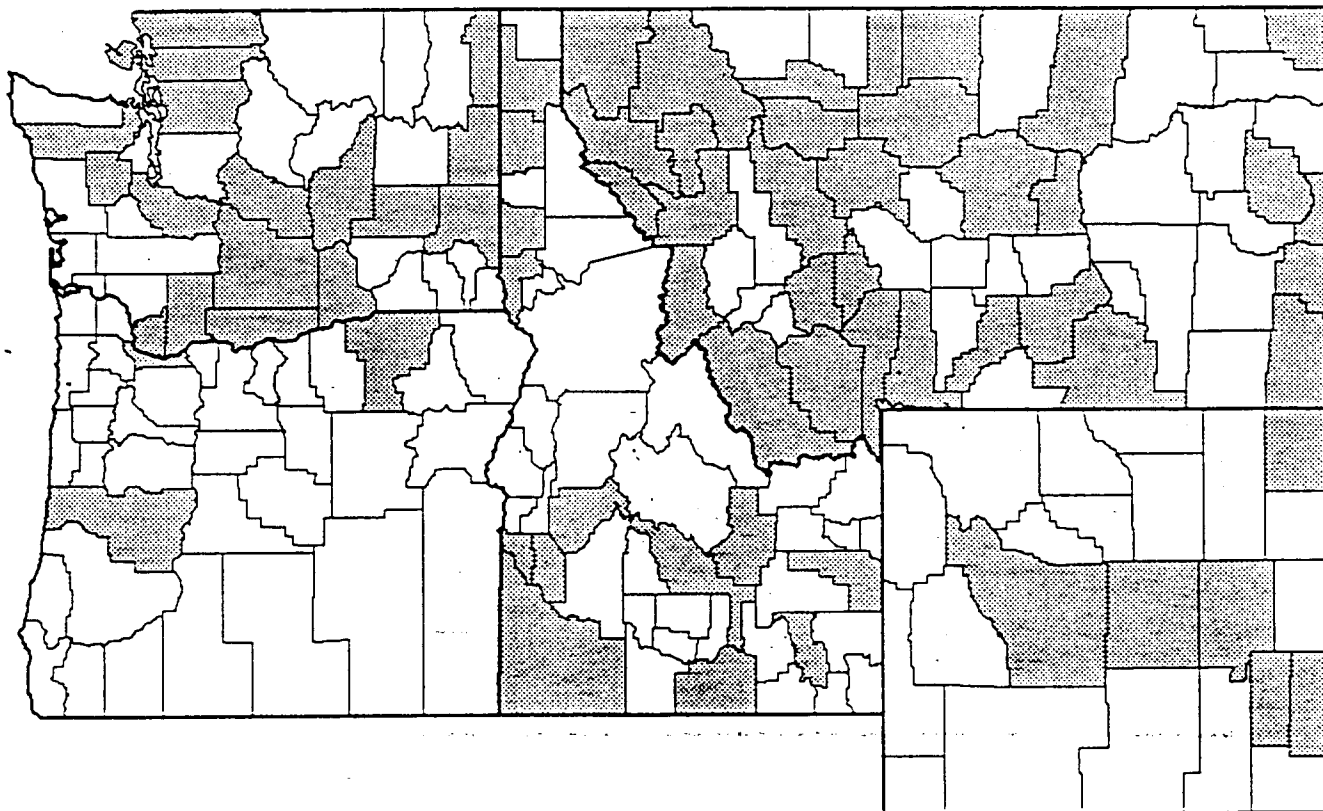


Arctium lappa INCREASE IN NORTHWEST STATES

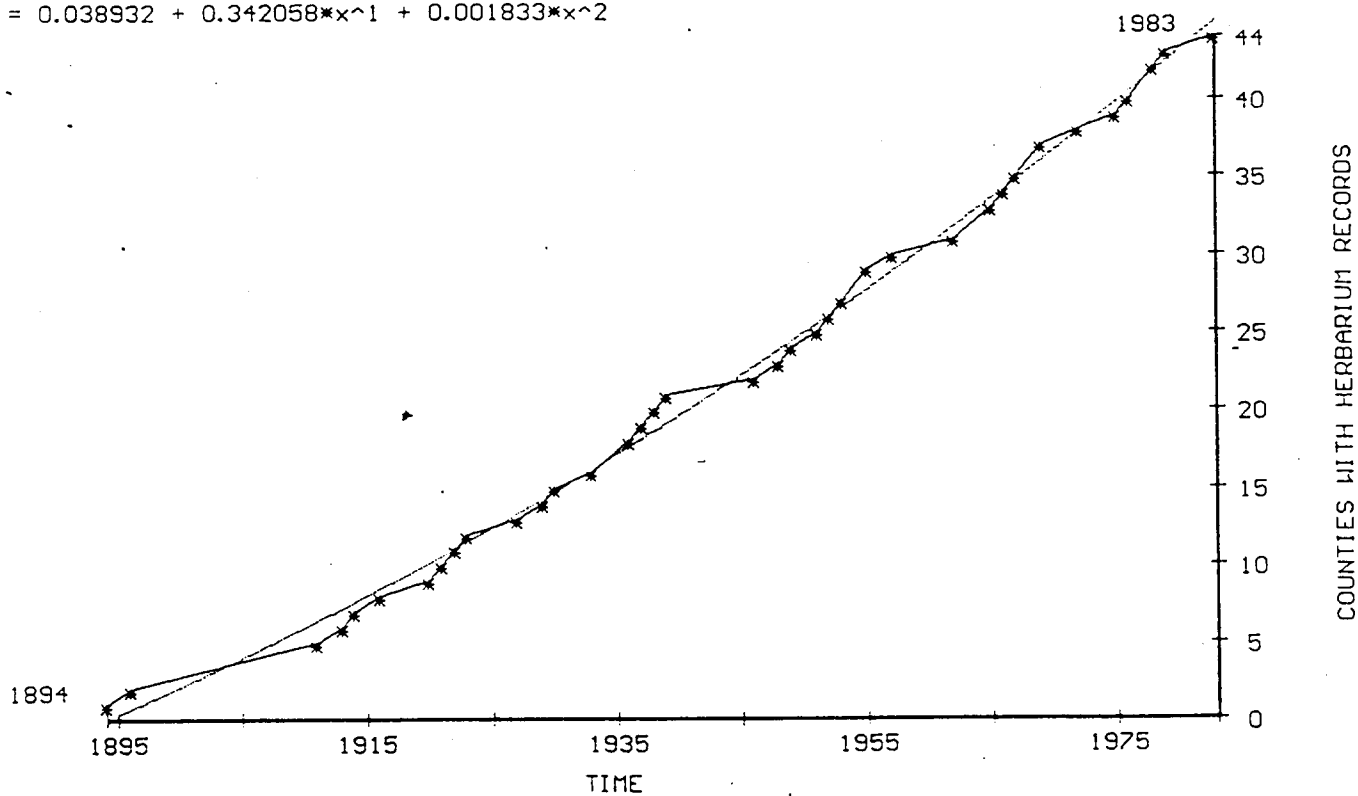
$$y = 0.673713 + 0.098311 * x^1 + 0.001099 * x^2$$



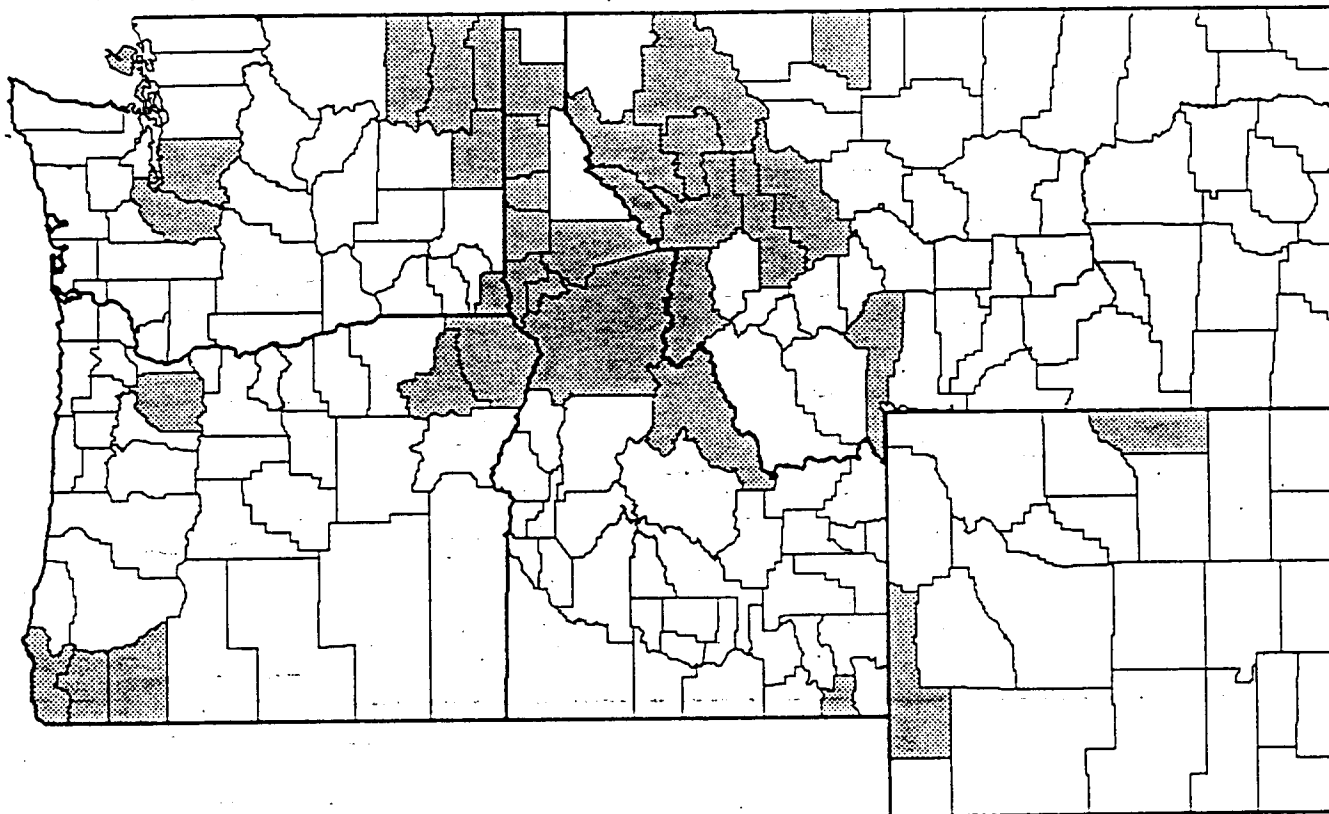
Counties reporting the exotic *Arctium minus* (common burdock), 1875-1993.



Arctium minus INCREASE IN NORTHWEST STATES
 $y = 0.038932 + 0.342058 * x^1 + 0.001833 * x^2$

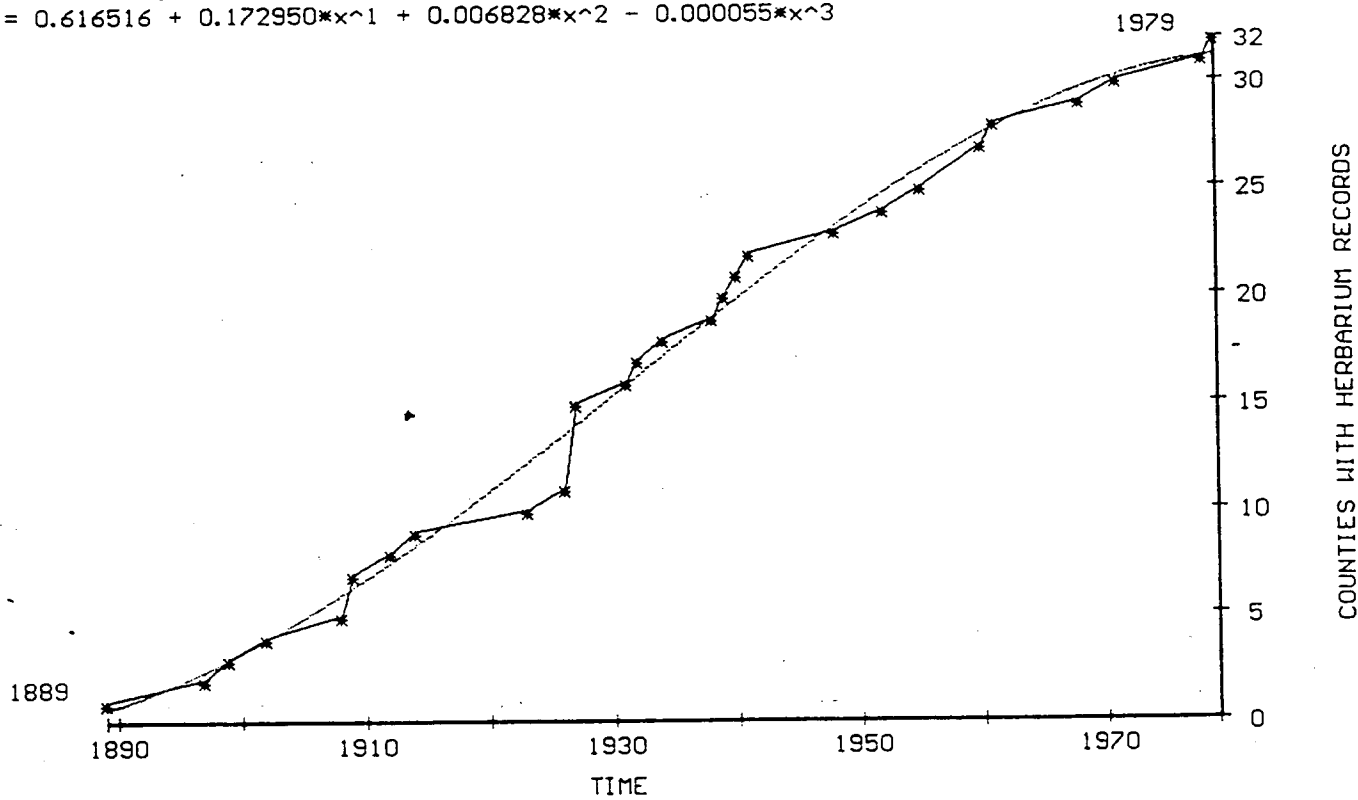


Counties reporting the exotic *Arenaria serpyllifolia* (thymeleaf sandwort), 1875-1993.

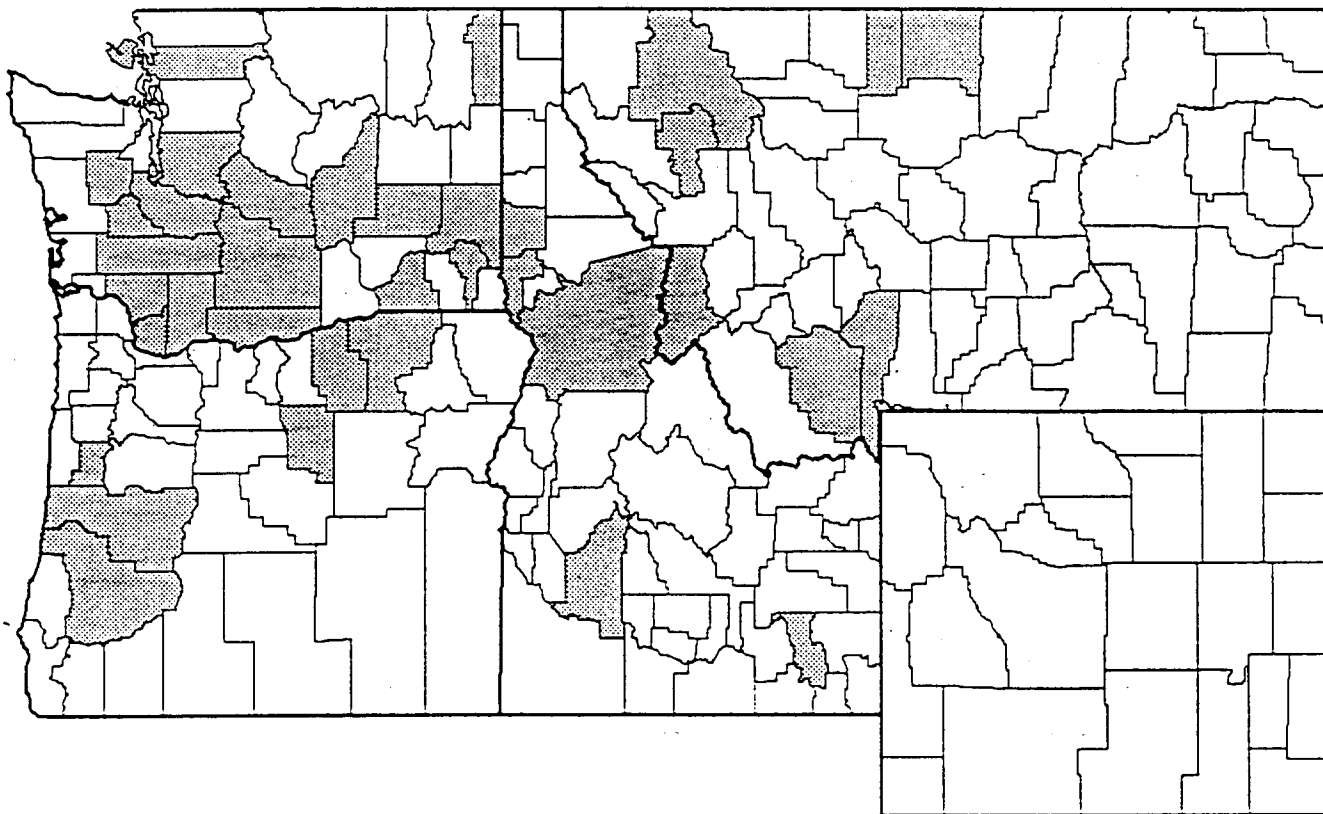


Arenaria serpyllifolia INCREASE IN NORTHWEST STATES

$$y = 0.616516 + 0.172950 * x^1 + 0.006828 * x^2 - 0.000055 * x^3$$

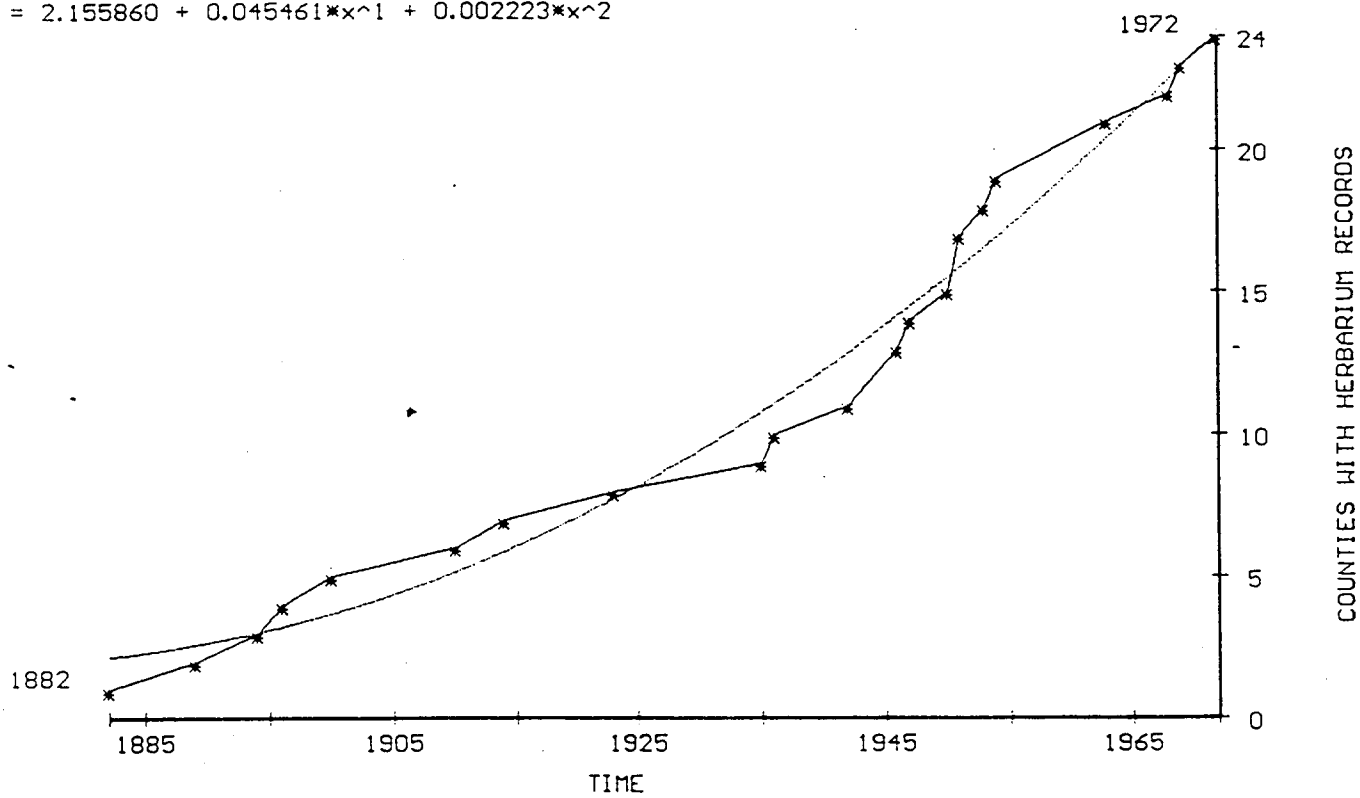


Counties reporting the exotic *Arrhenatherum elatius* (tall oatgrass), 1875-1993.

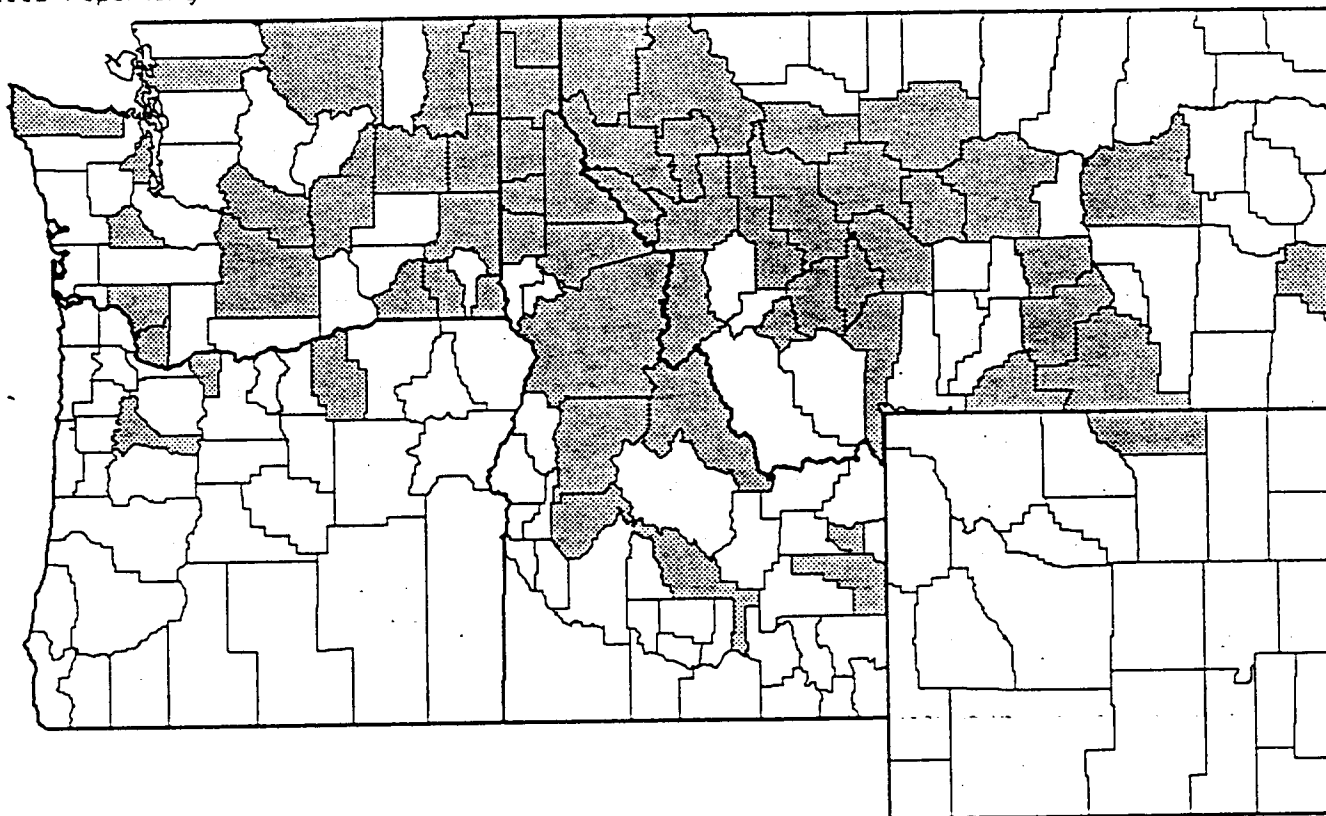


Arrhenatherum elatius INCREASE IN NORTHWEST STATES

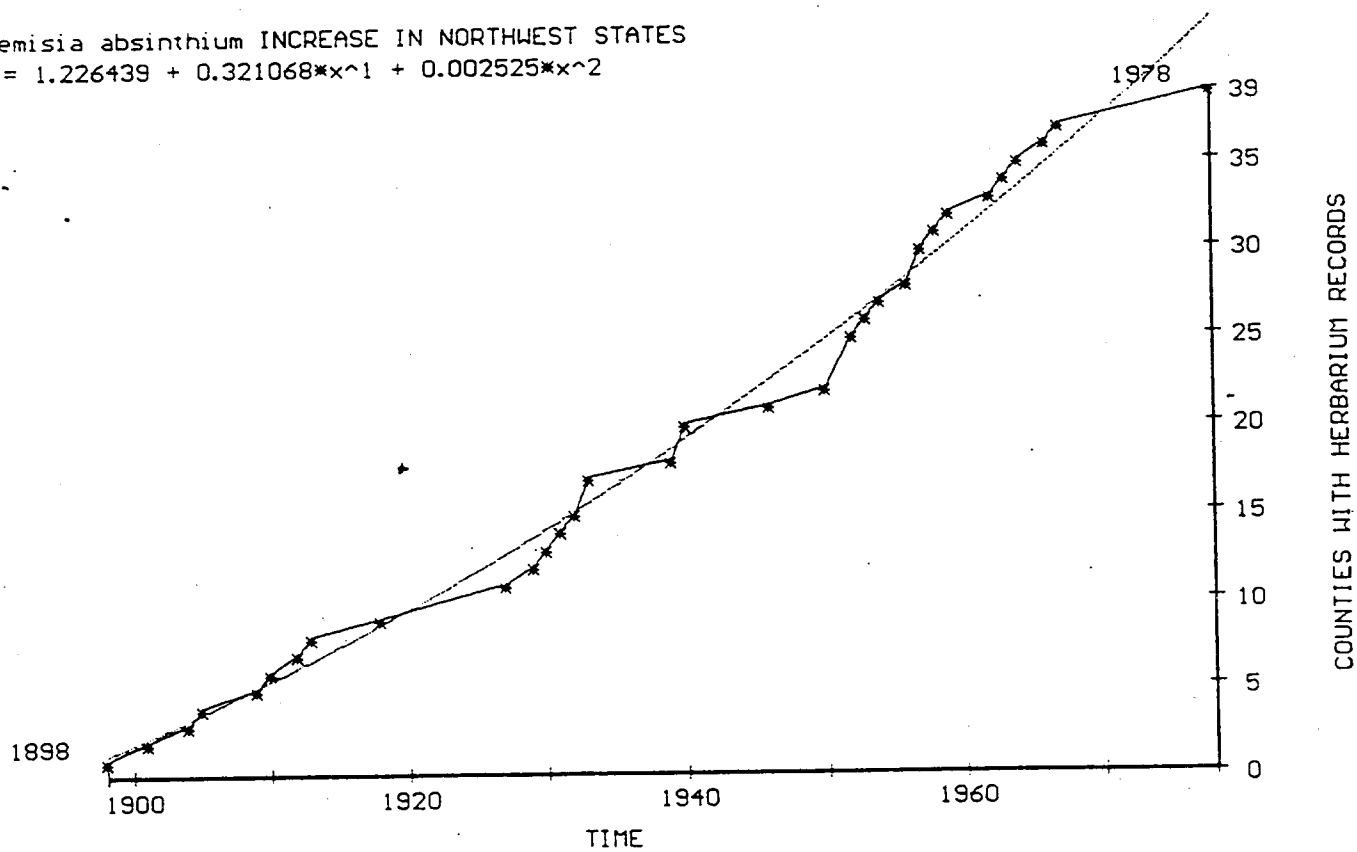
$$y = 2.155860 + 0.045461 * x^1 + 0.002223 * x^2$$



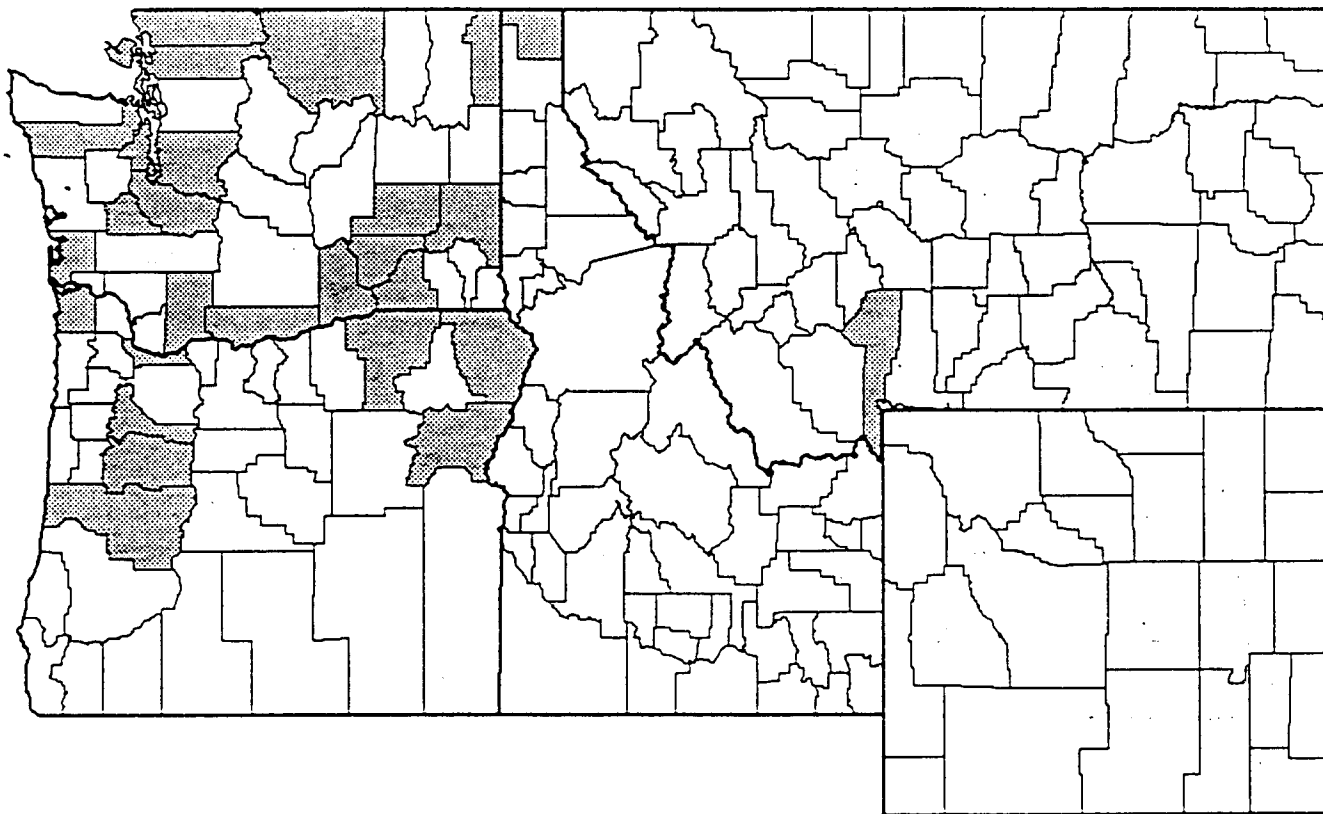
Counties reporting the exotic *Artemisia absinthium* (absinth wormwood), 1875-1993.



Artemisia absinthium INCREASE IN NORTHWEST STATES
 $y = 1.226439 + 0.321068 * x^1 + 0.002525 * x^2$

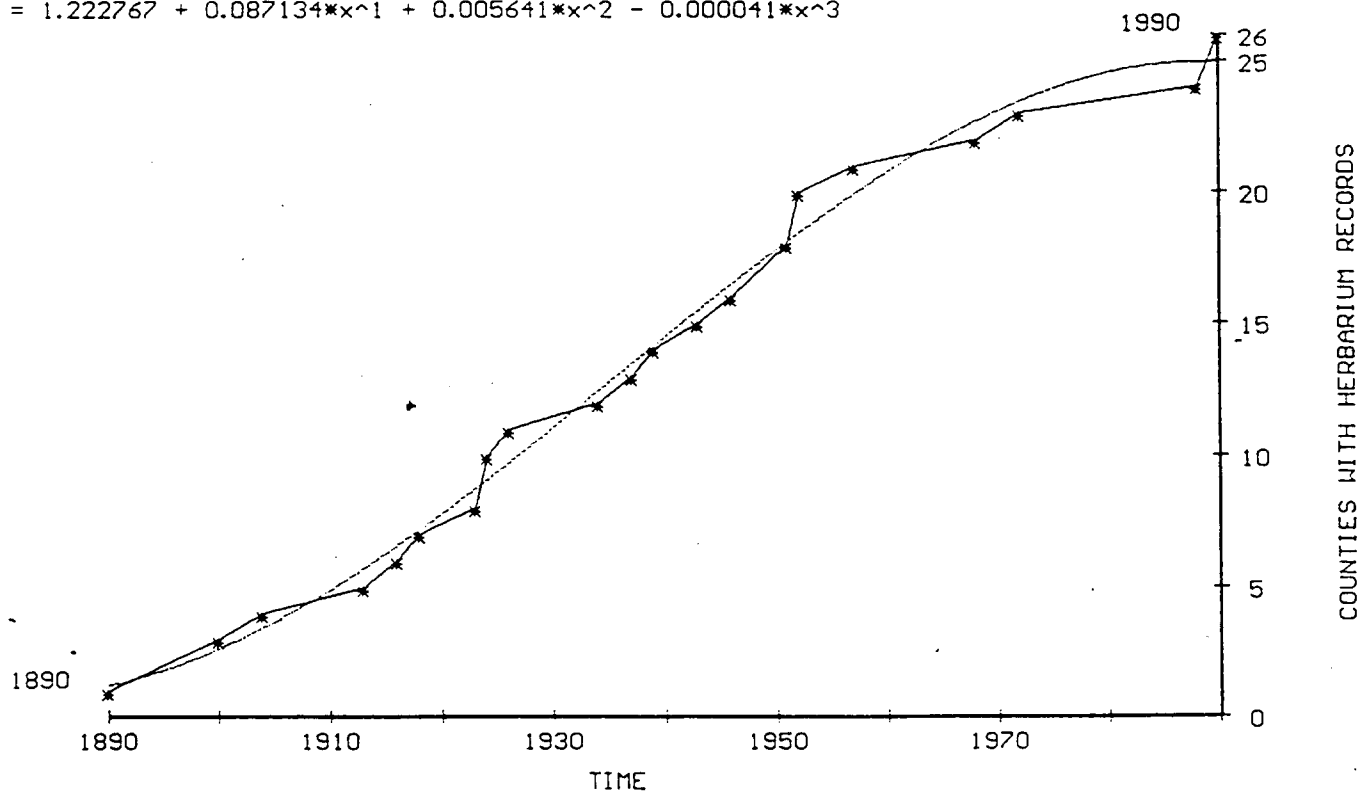


Counties reporting the exotic *Artemisia vulgaris* (mugwort), 1875-1994.

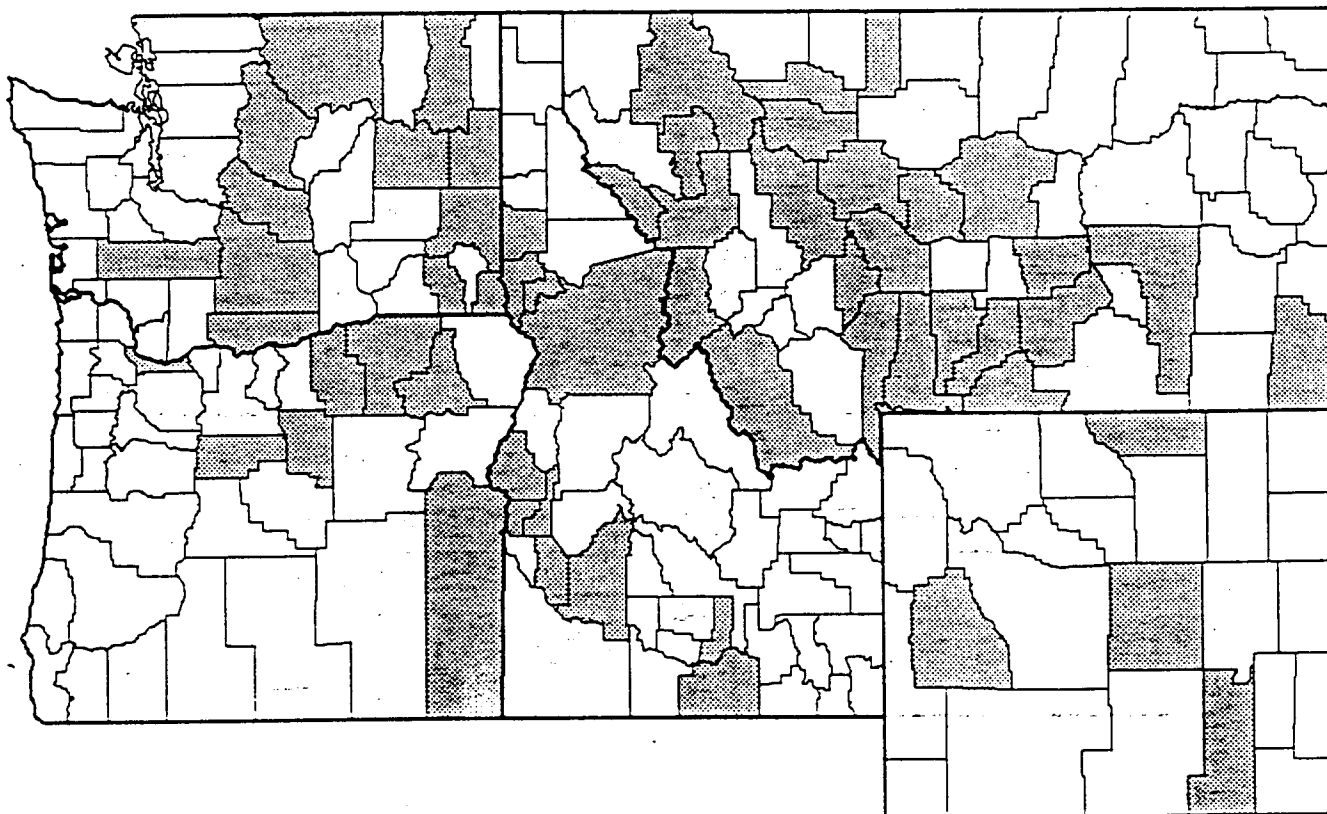


Artemisia vulgaris INCREASE IN NORTHWEST STATES

$$y = 1.222767 + 0.087134 * x^1 + 0.005641 * x^2 - 0.000041 * x^3$$

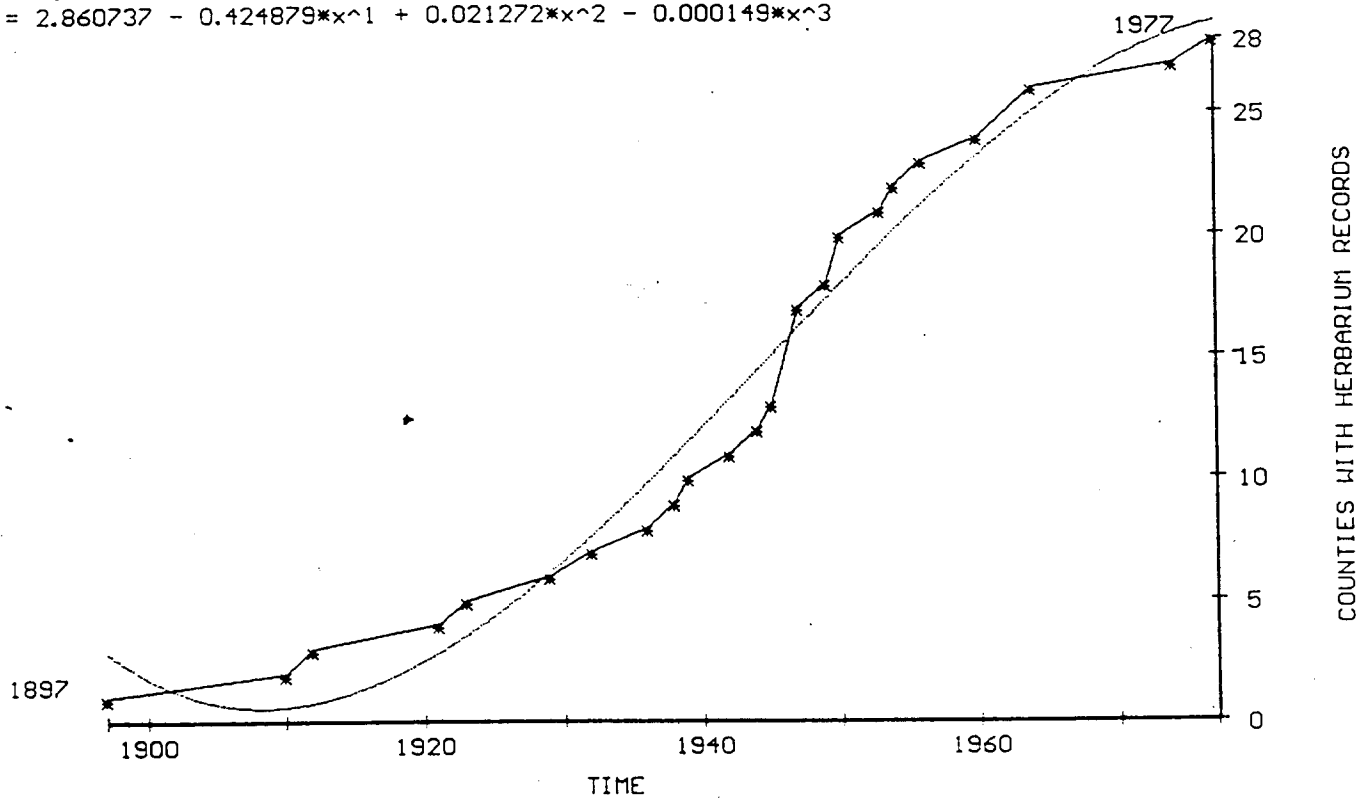


Counties reporting the exotic *Asperugo procumbens* (catchweed), 1875-1993.

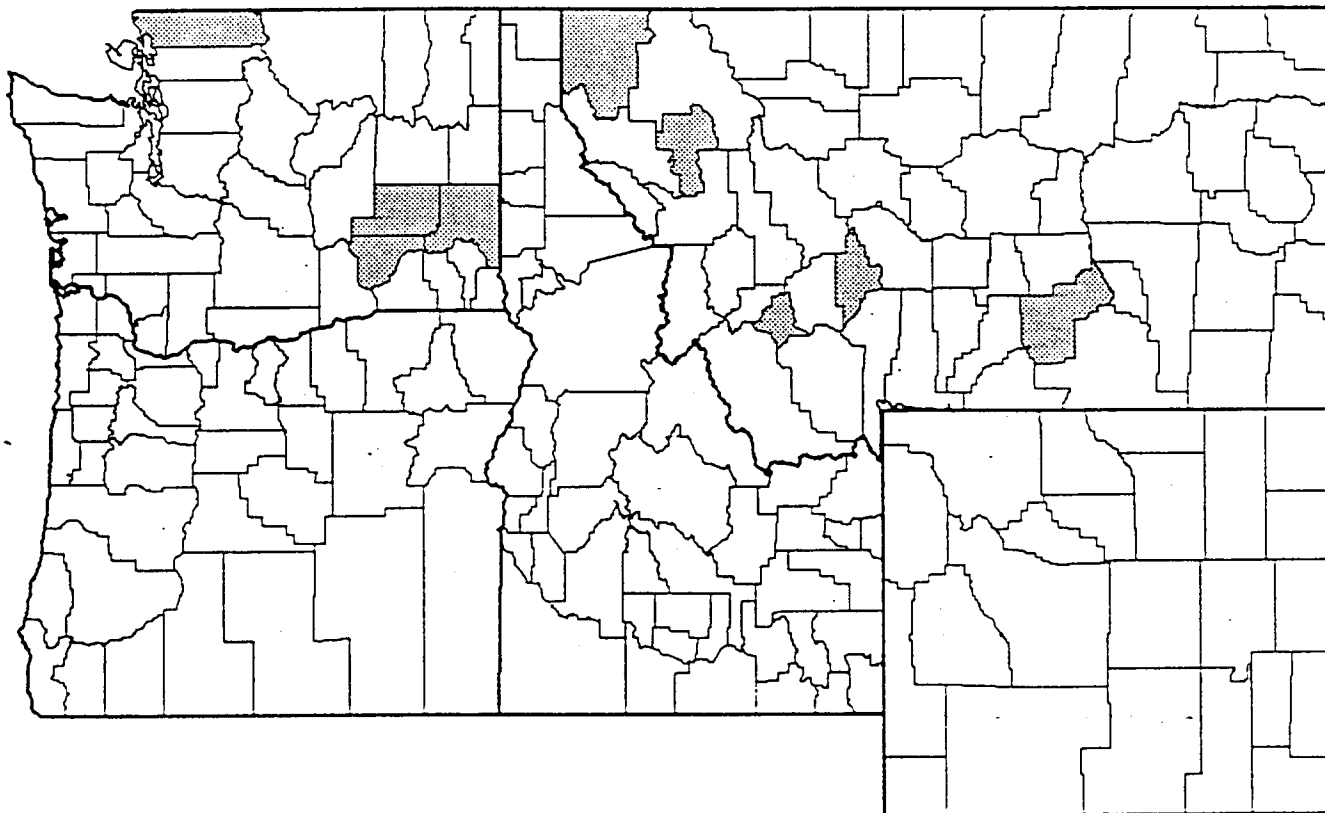


Asperugo procumbens INCREASE IN NORTHWEST STATES

$$y = 2.860737 - 0.424879x^1 + 0.021272x^2 - 0.000149x^3$$

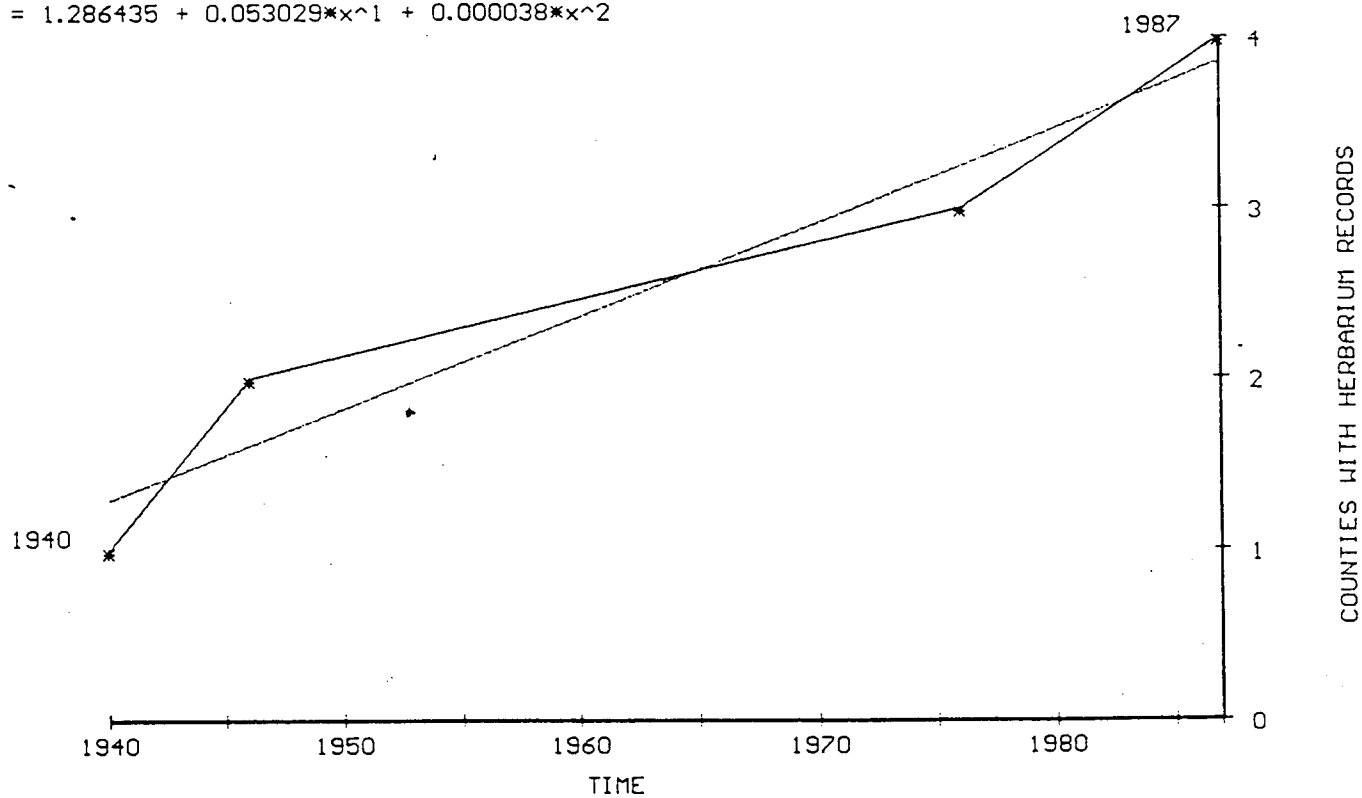


Counties reporting the exotic *Astragalus cicer* (chick pea milk vetch), 1875-1991.

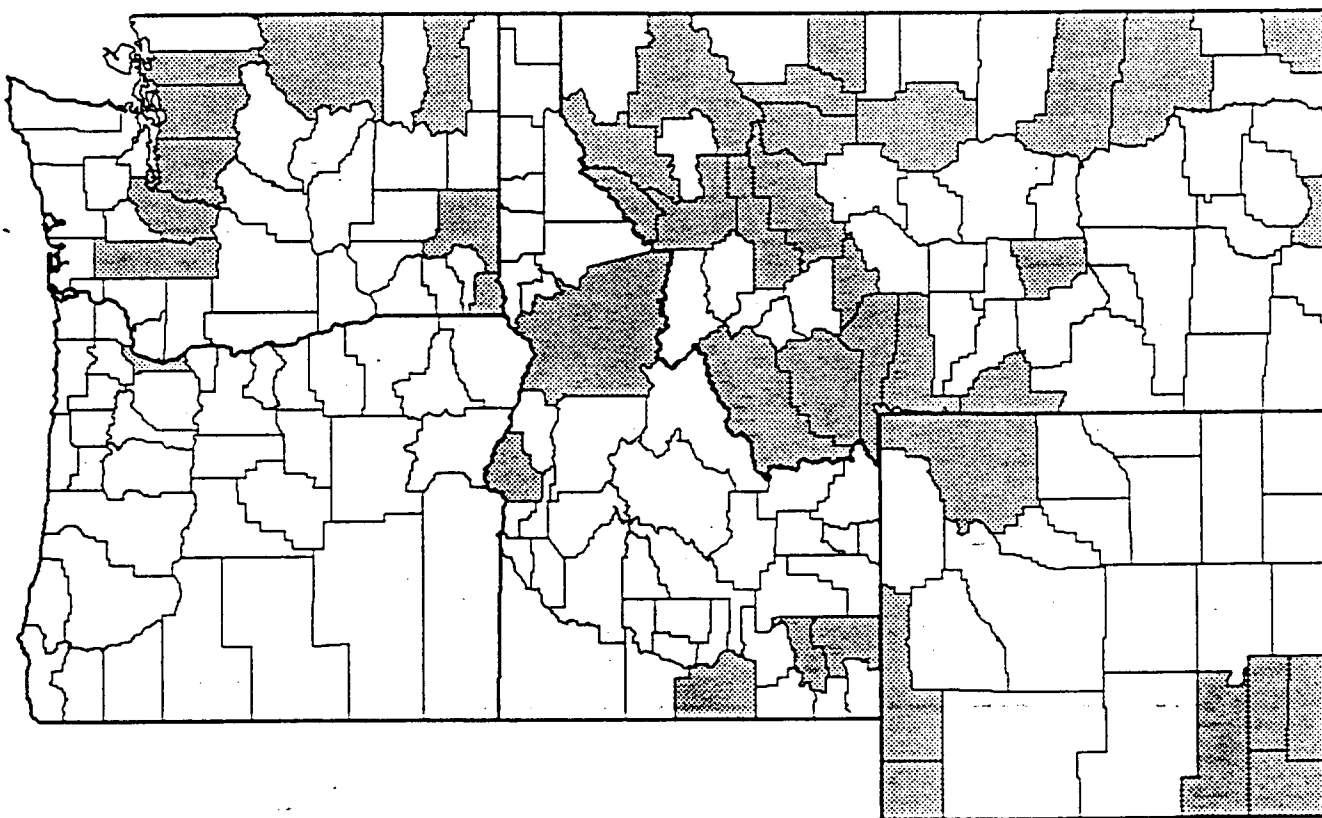


Astragalus cicer INCREASE IN NORTHWEST STATES

$$y = 1.286435 + 0.053029 * x^1 + 0.000038 * x^2$$

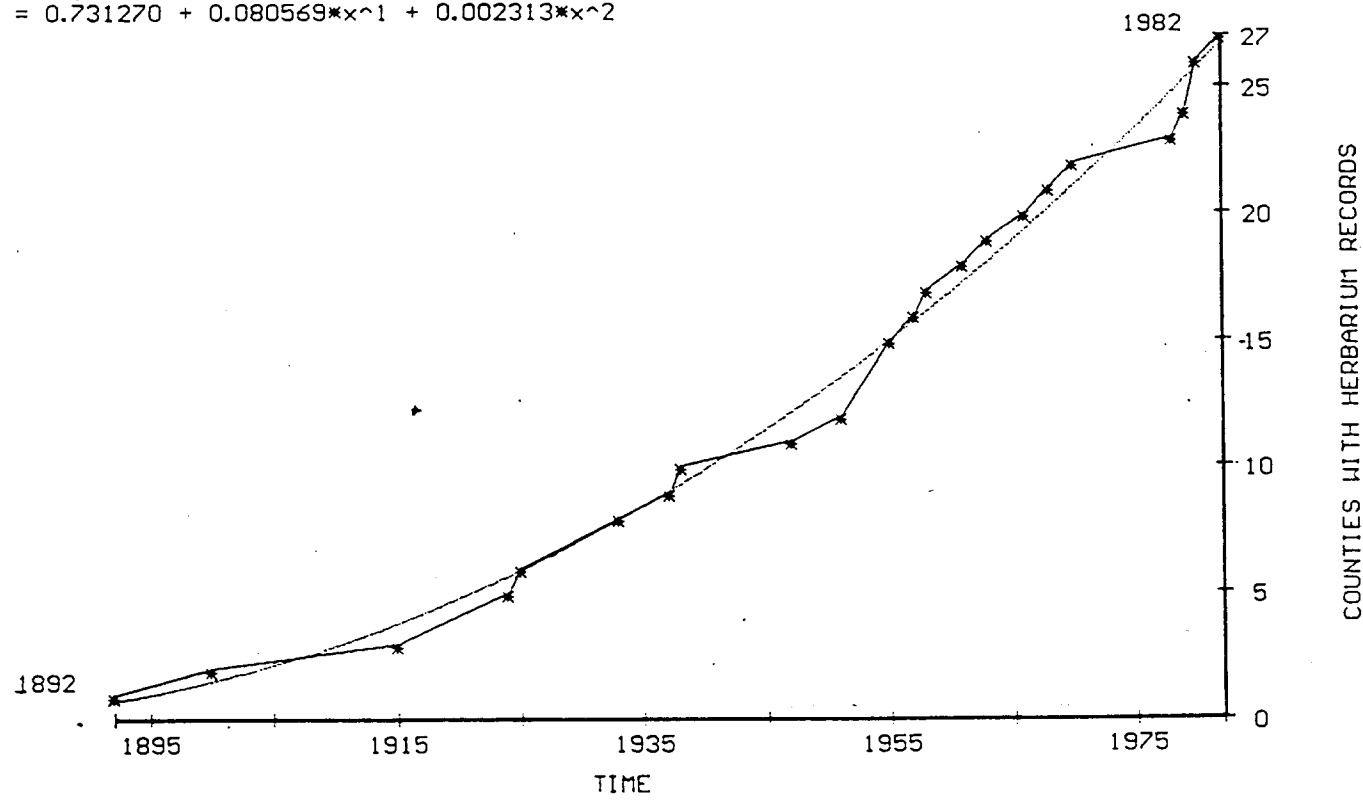


Counties reporting the exotic *Atriplex hortensis* (garden orach), 1875-1991.

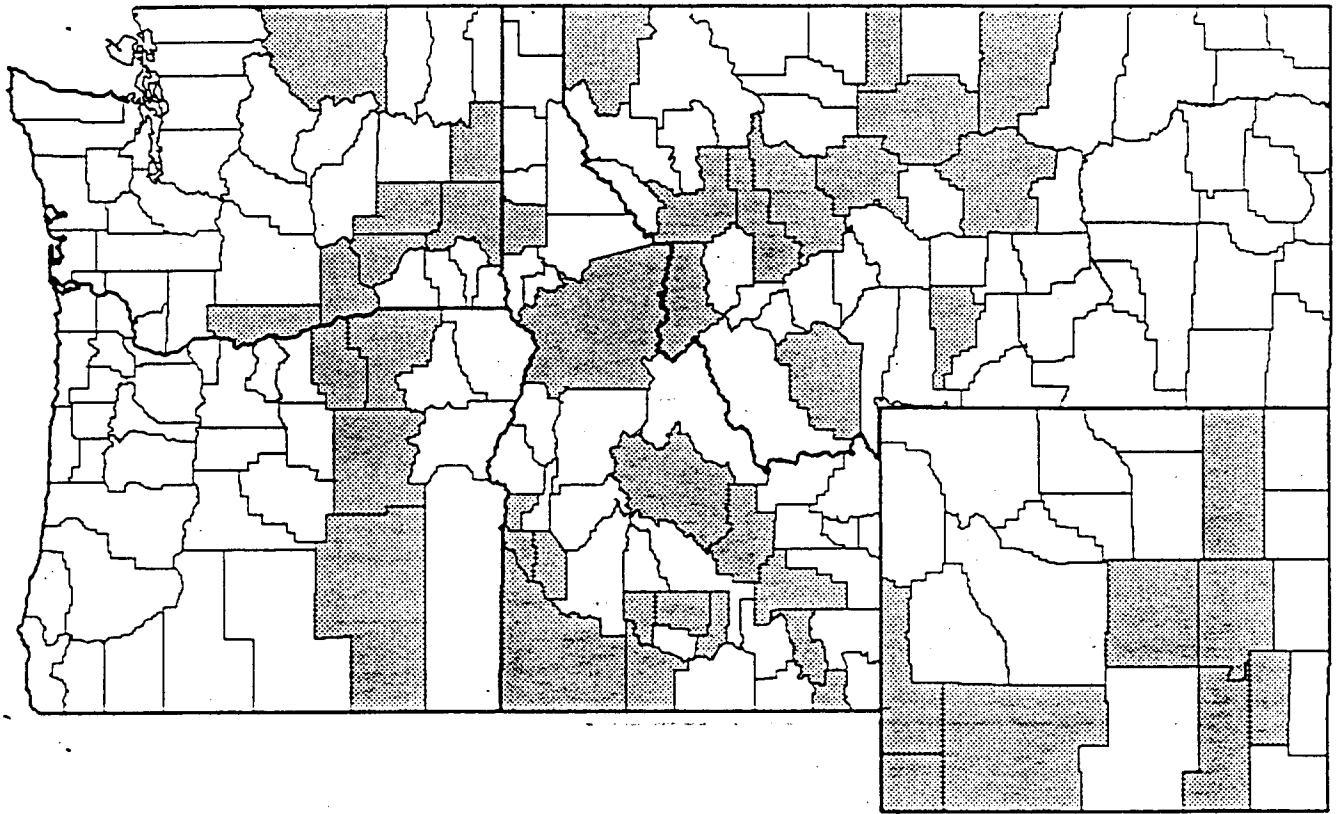


Atriplex hortensis INCREASE IN NORTHWEST STATES

$$y = 0.731270 + 0.080569 * x^1 + 0.002313 * x^2$$

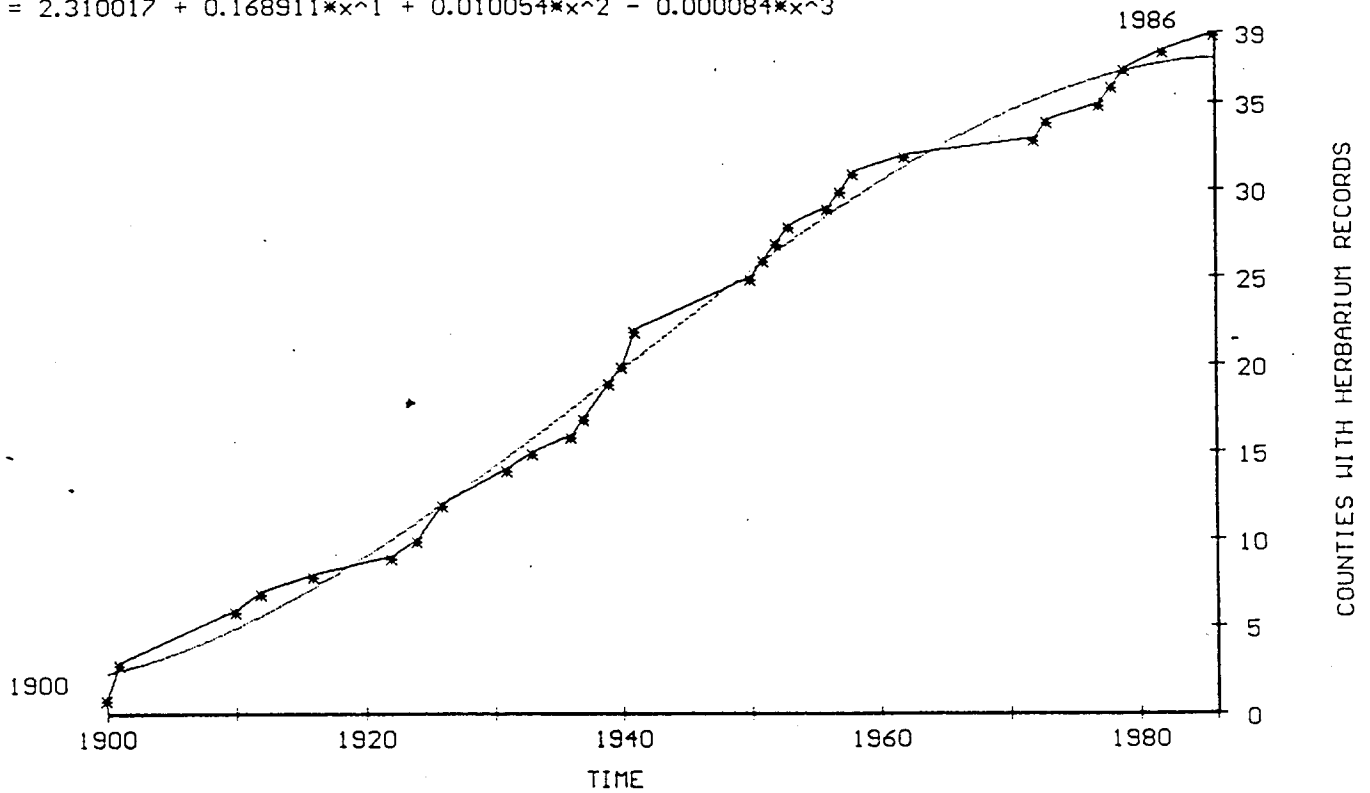


Counties reporting the exotic *Atriplex rosea* (red orach), 1875-1994.

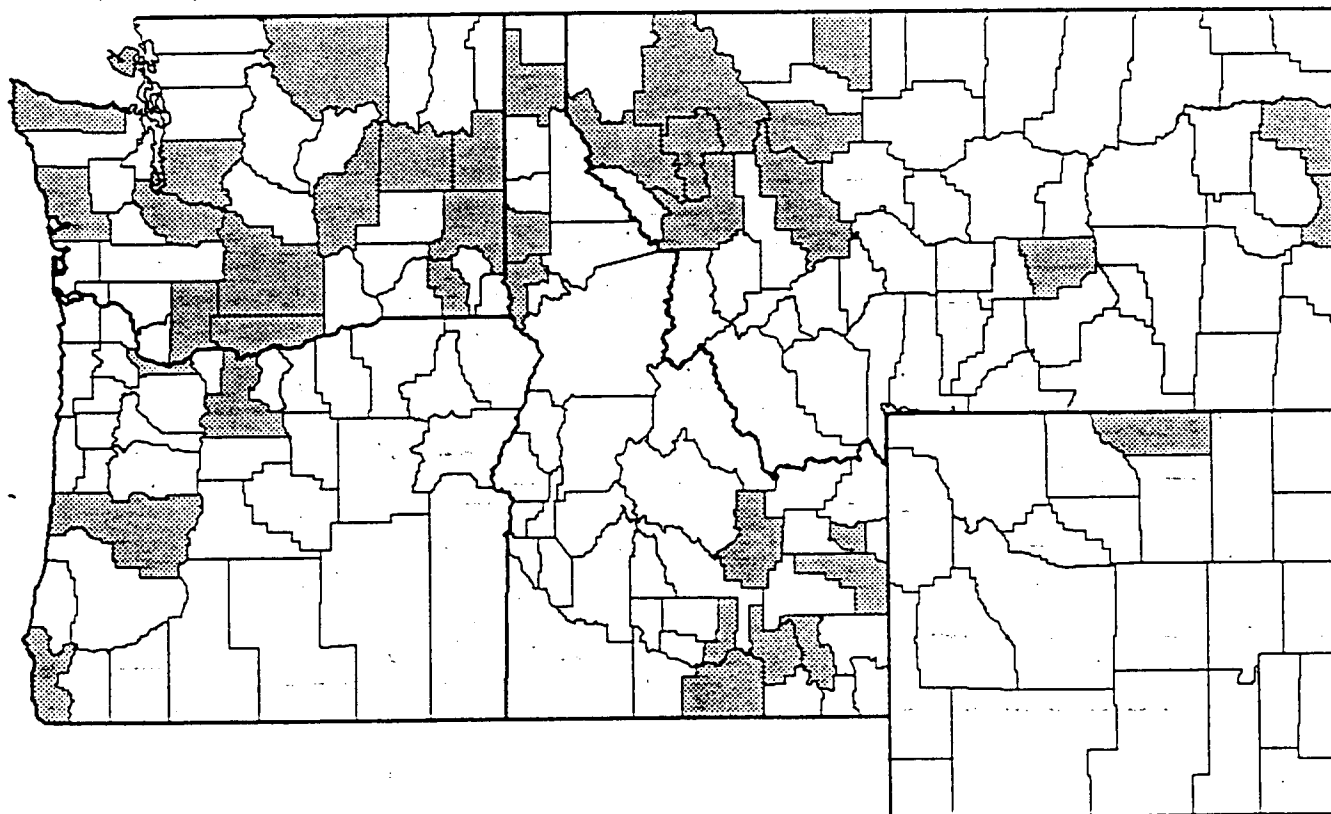


Atriplex rosea INCREASE IN NORTHWEST STATES

$$y = 2.310017 + 0.168911 \times x^1 + 0.010054 \times x^2 - 0.000084 \times x^3$$

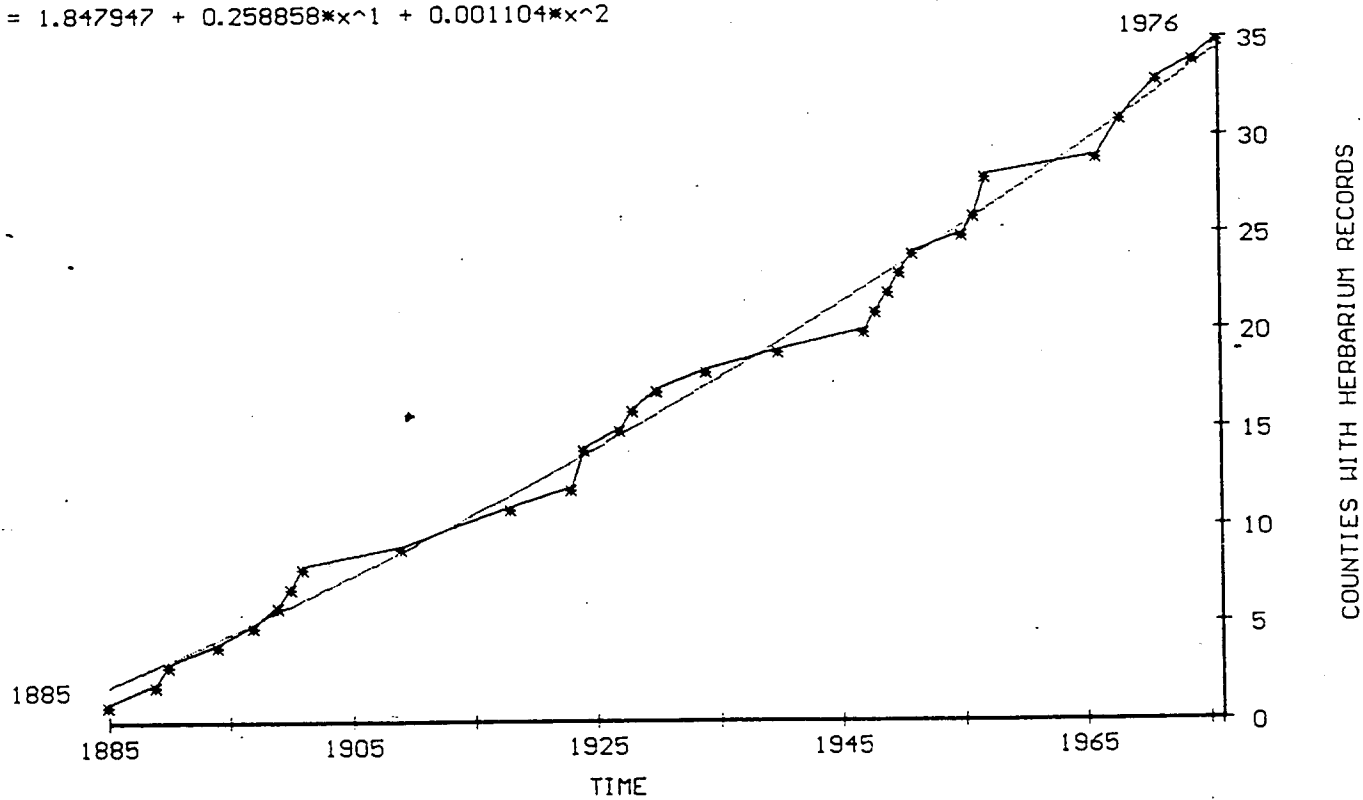


Counties reporting the exotic *Avena fatua* (wild oat), 1875-1993.

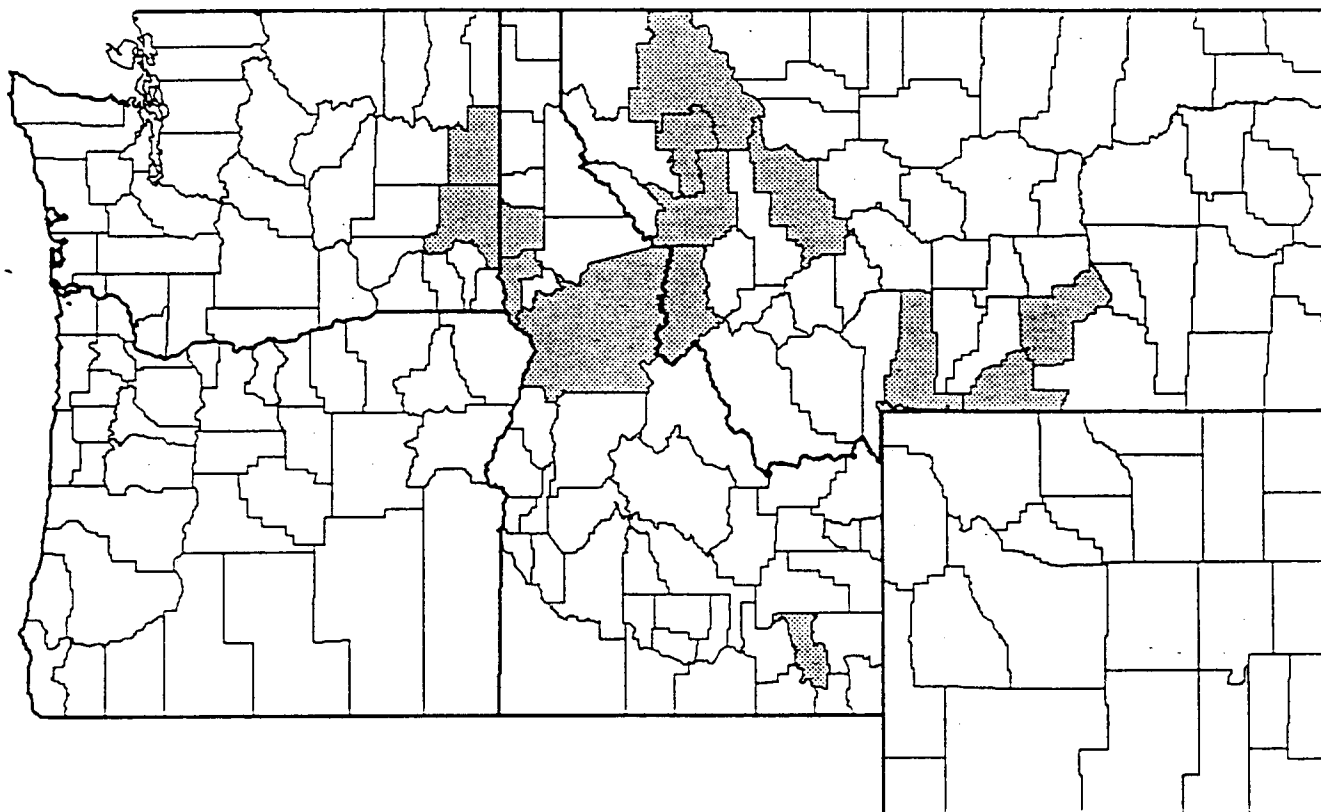


Avena fatua INCREASE IN NORTHWEST STATES

$$y = 1.847947 + 0.258858 * x^1 + 0.001104 * x^2$$

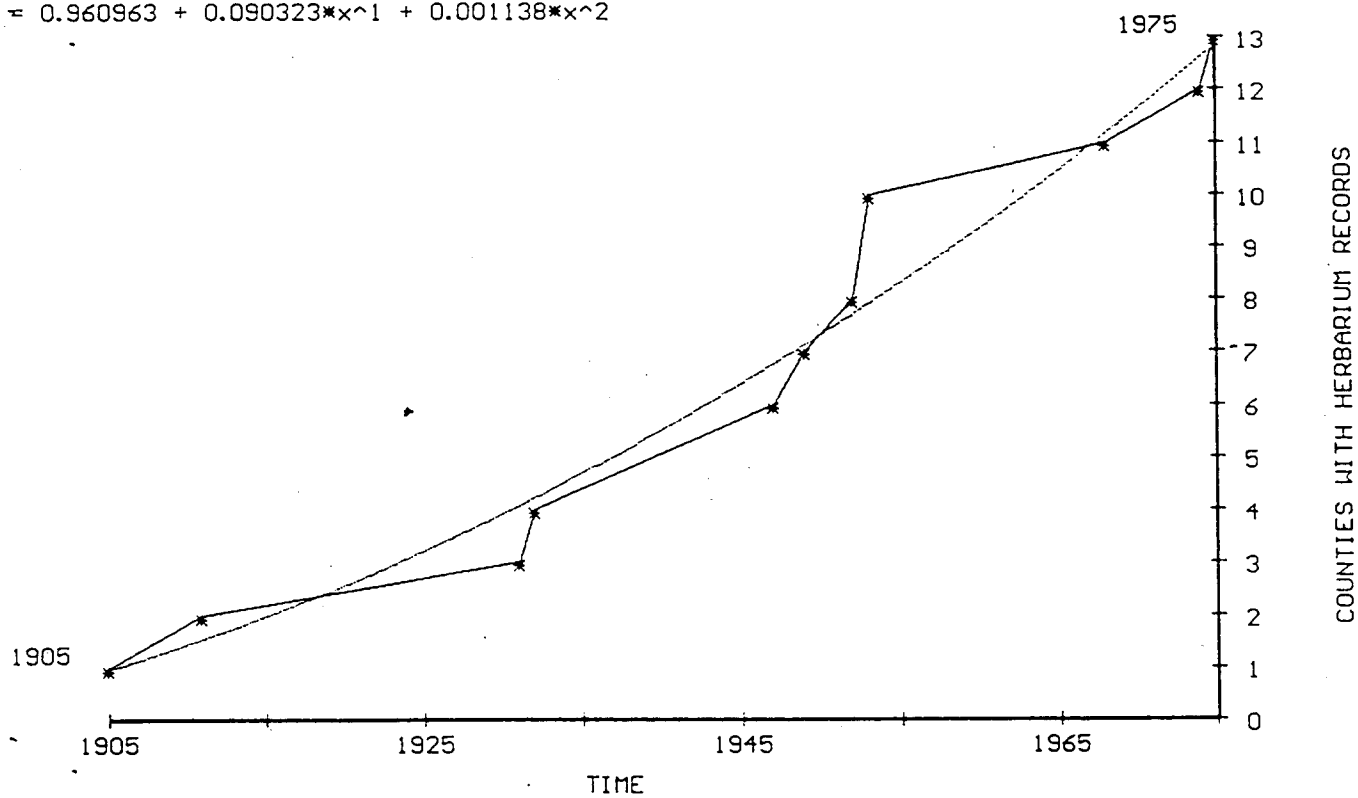


Counties reporting the exotic *Berberis vulgaris* (European barberry), 1875-1993.

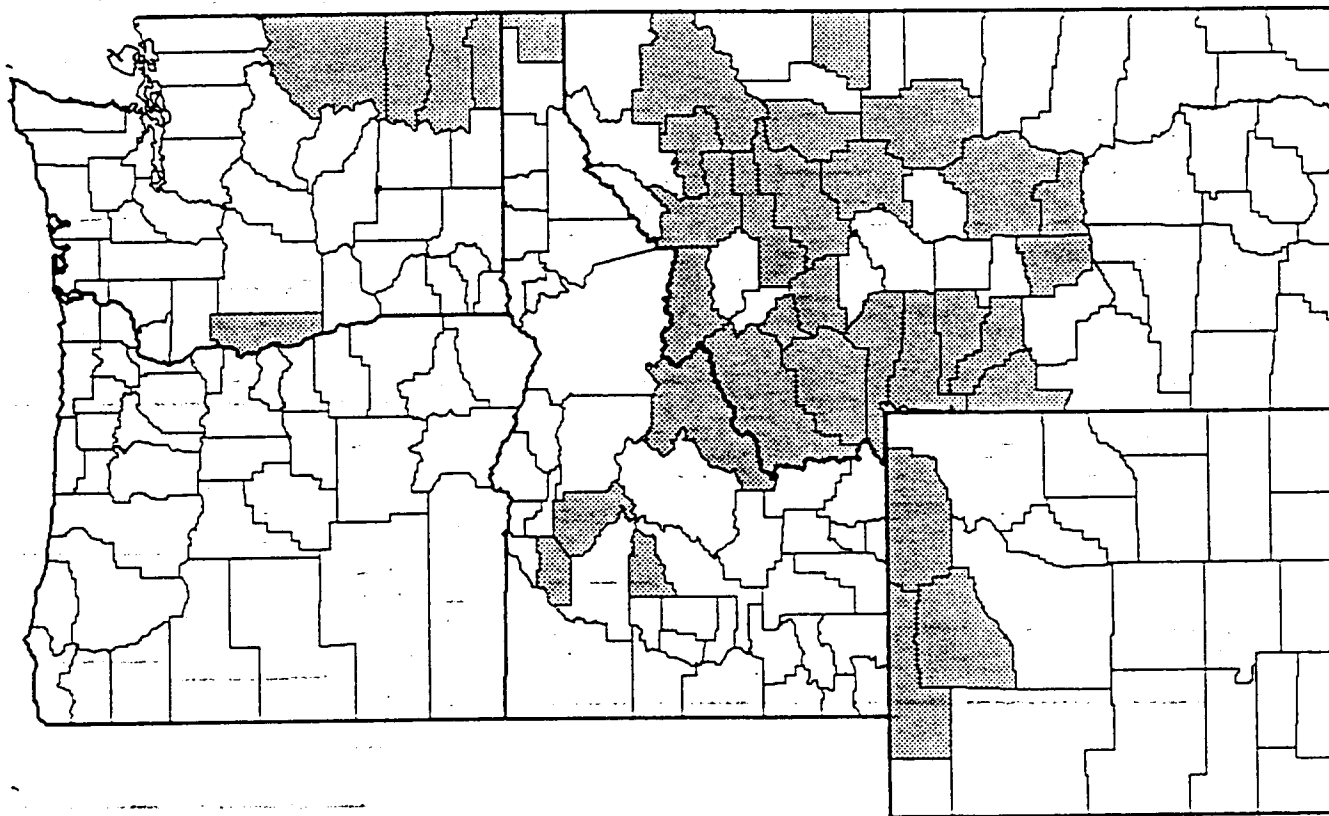


Berberis vulgaris INCREASE IN NORTHWEST STATES

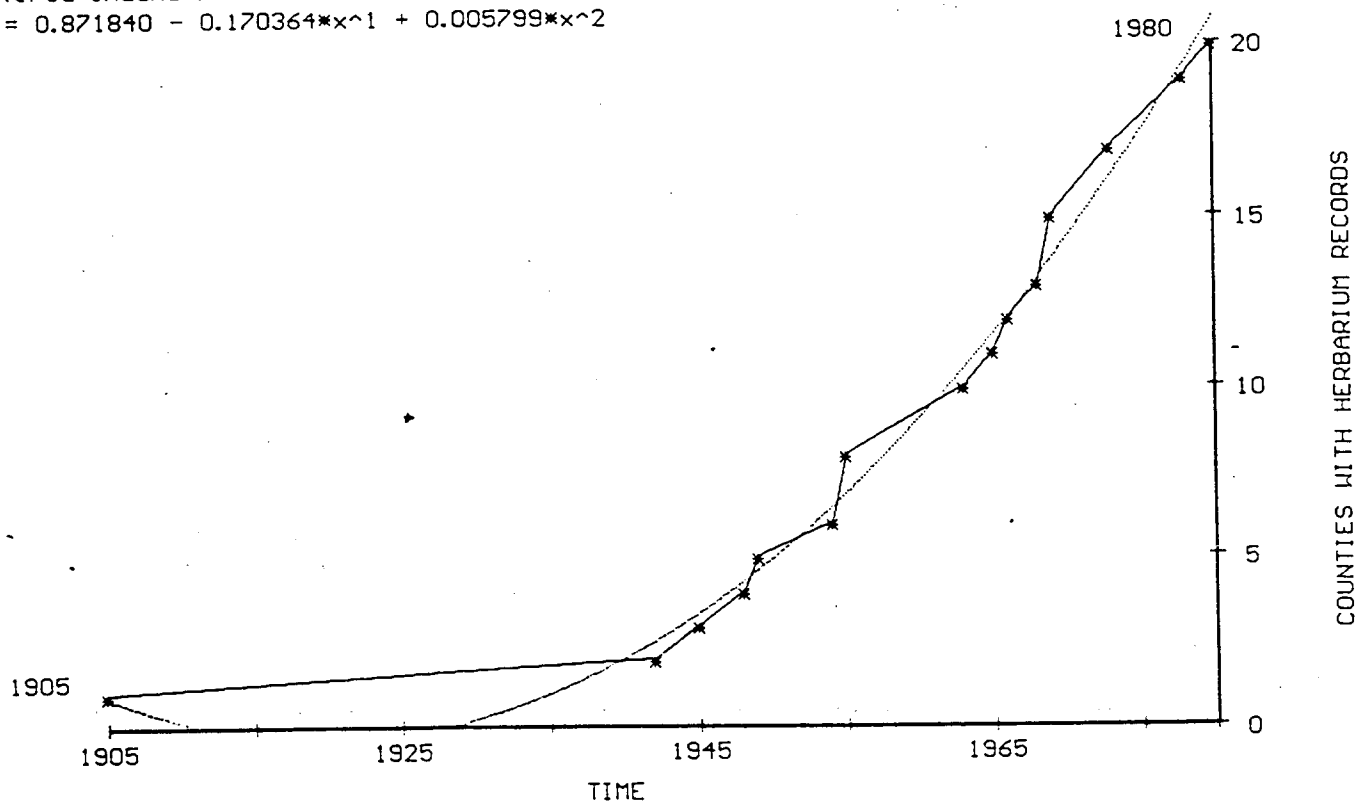
$$y = 0.960963 + 0.090323x^1 + 0.001138x^2$$



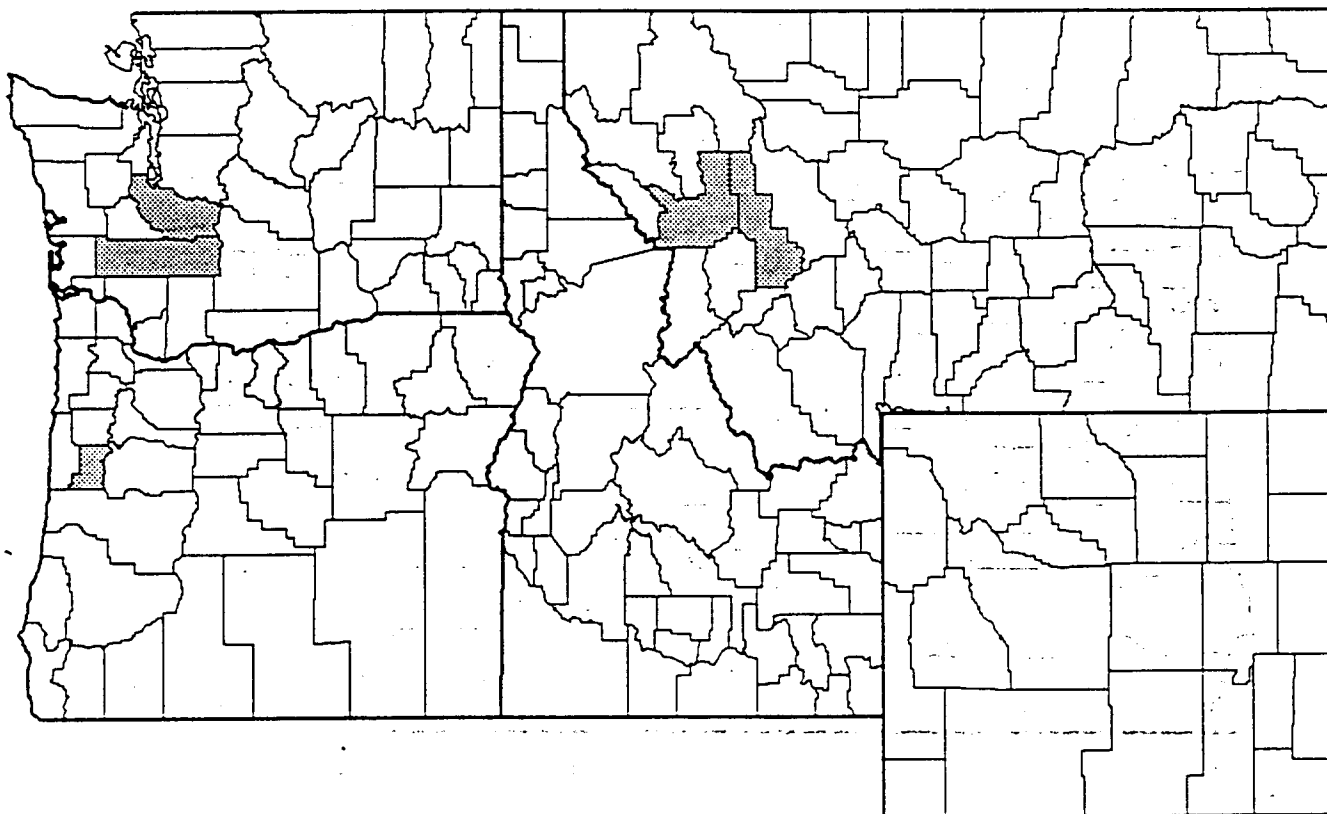
Counties reporting the exotic *Berteroa incana* (hoary alyssum), 1875-1993.



Berteroa incana INCREASE IN NORTHWEST STATES
 $y = 0.871840 - 0.170364 * x^1 + 0.005799 * x^2$

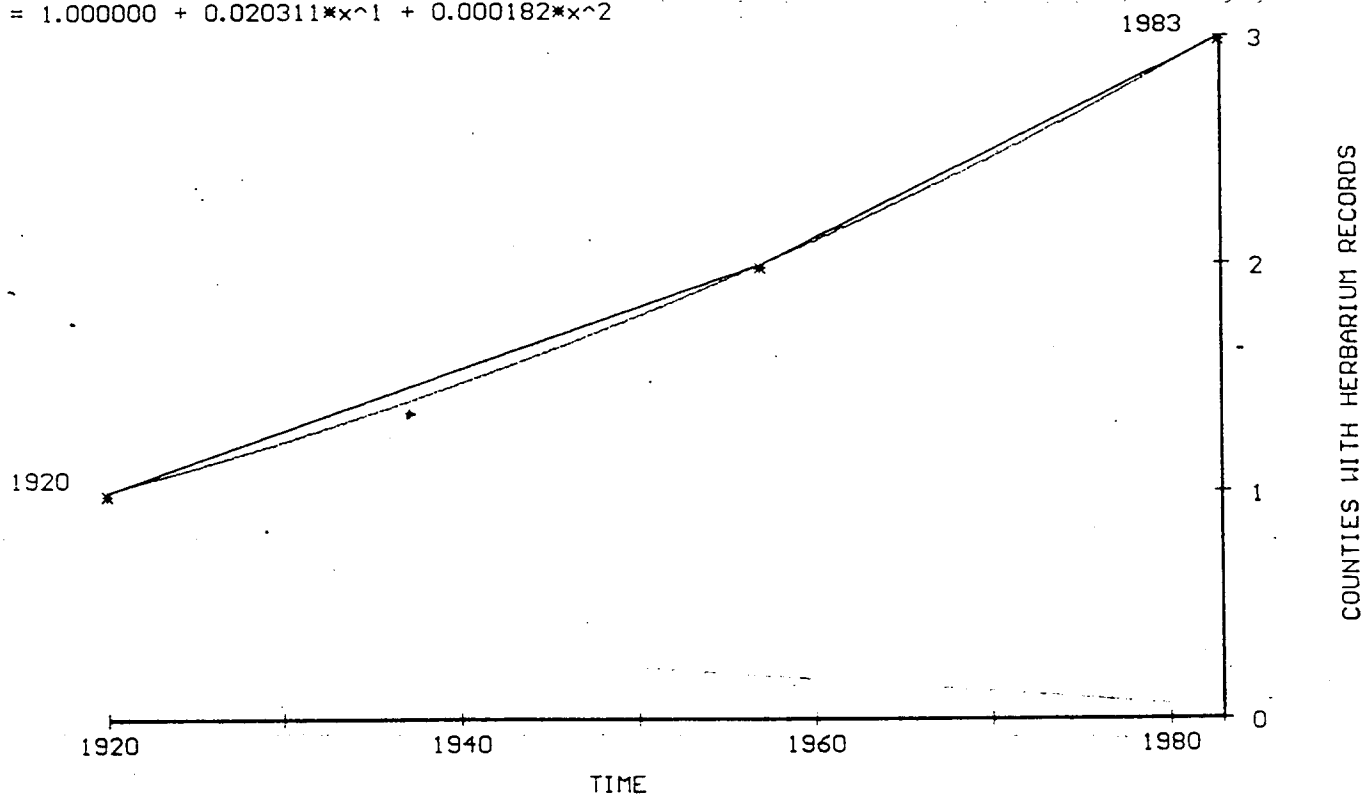


Counties reporting the exotic *Betula pendula* (European white birch), 1875-1989.

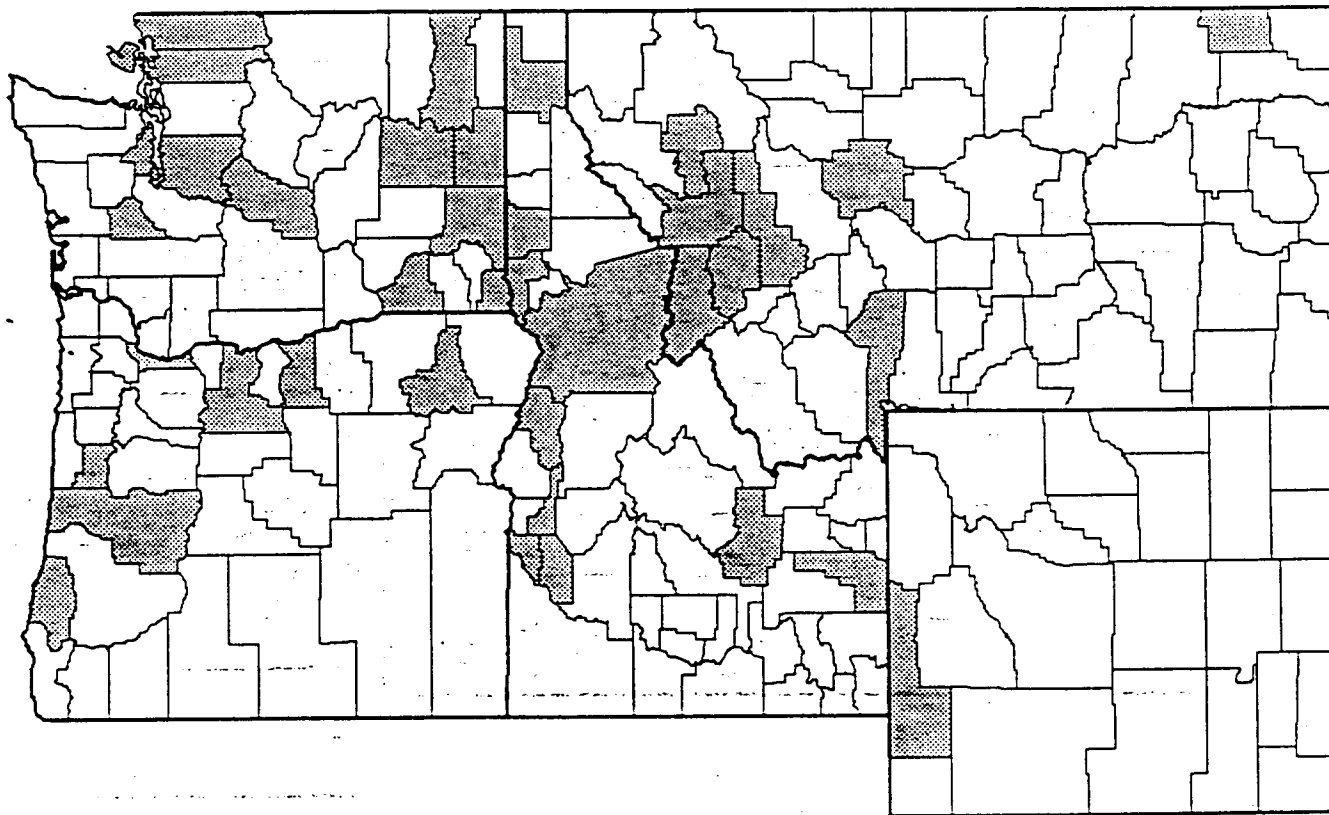


Betula pendula INCREASE IN NORTHWEST STATES

$$y = 1.000000 + 0.020311 * x^1 + 0.000182 * x^2$$

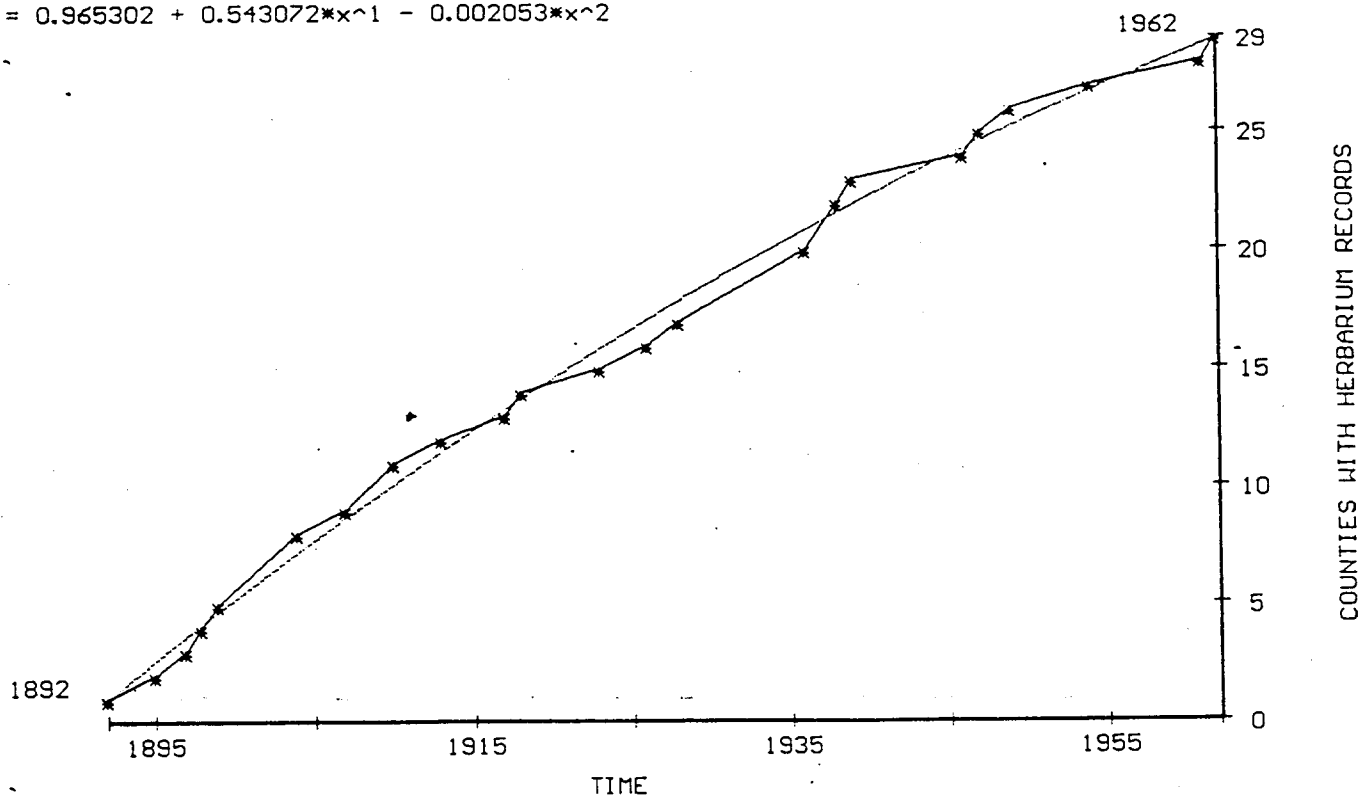


Counties reporting the exotic *Brassica campestris* (birdsrape mustard), 1875-1993.

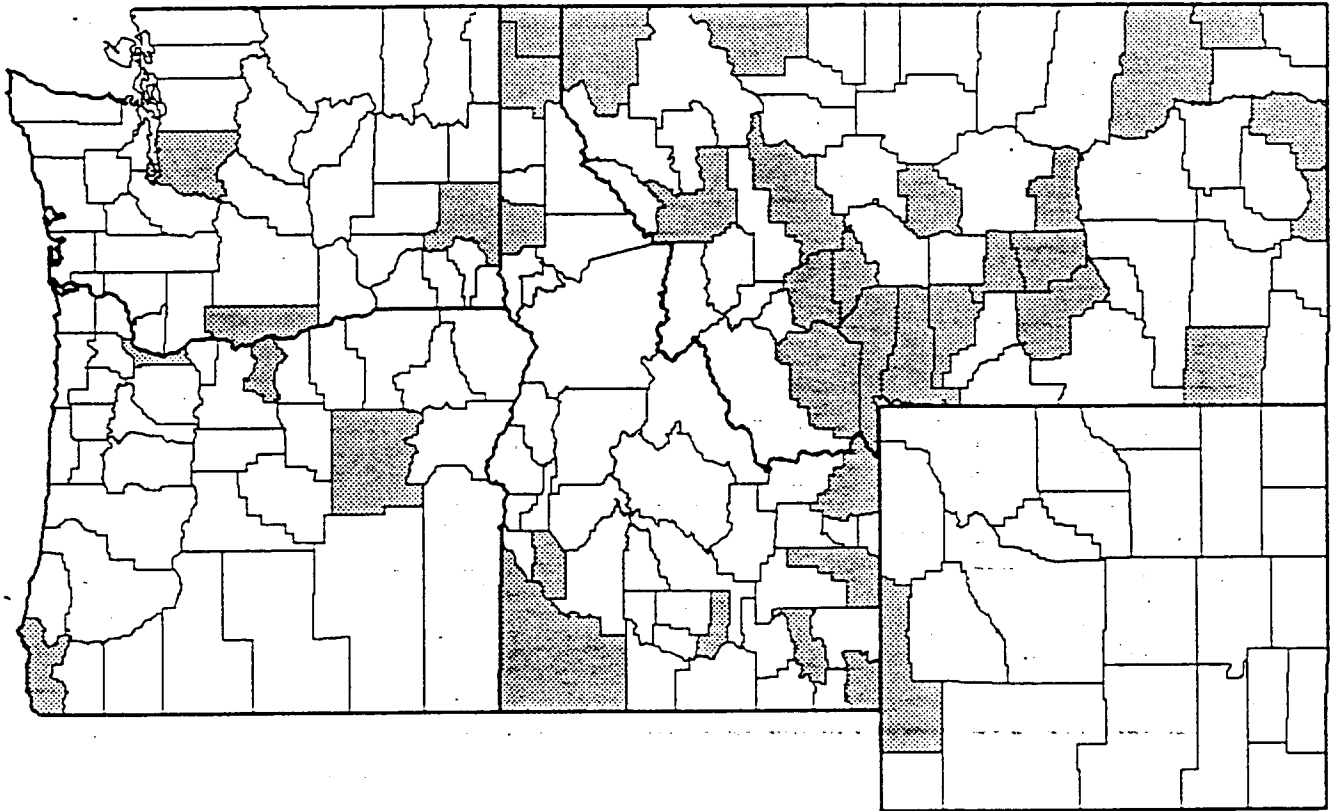


Brassica campestris INCREASE IN NORTHWEST STATES

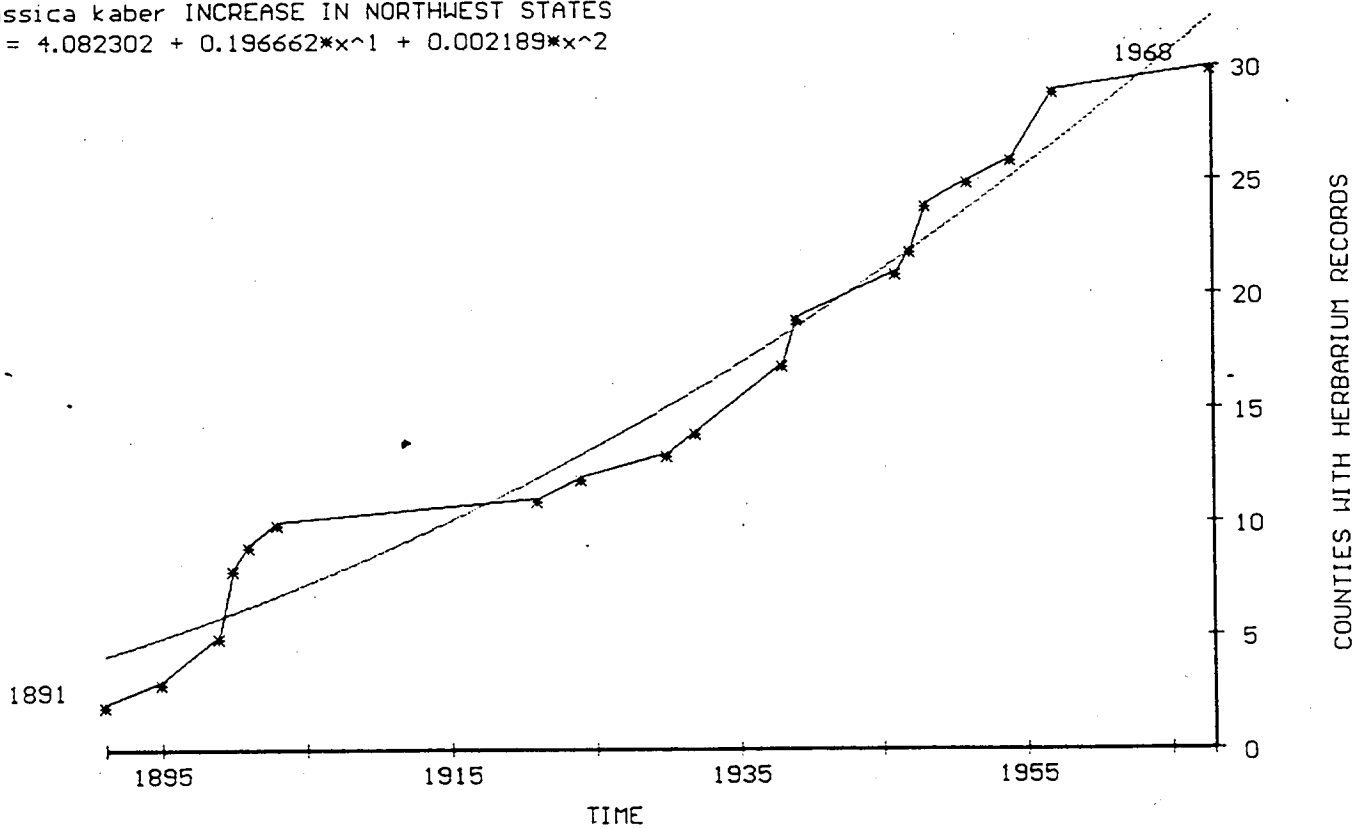
$$y = 0.965302 + 0.543072 * x^1 - 0.002053 * x^2$$



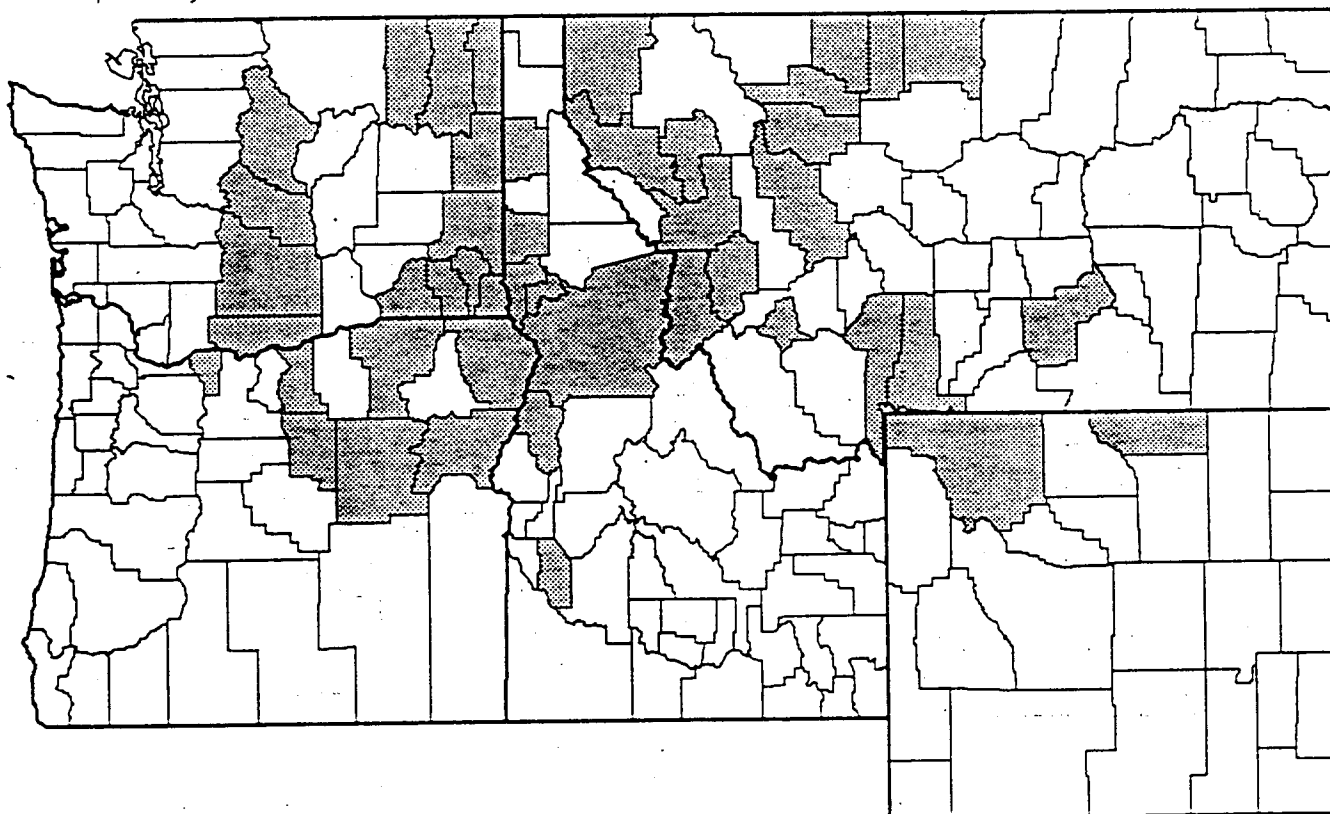
Counties reporting the exotic *Brassica kaber* (wild mustard), 1875-1993.



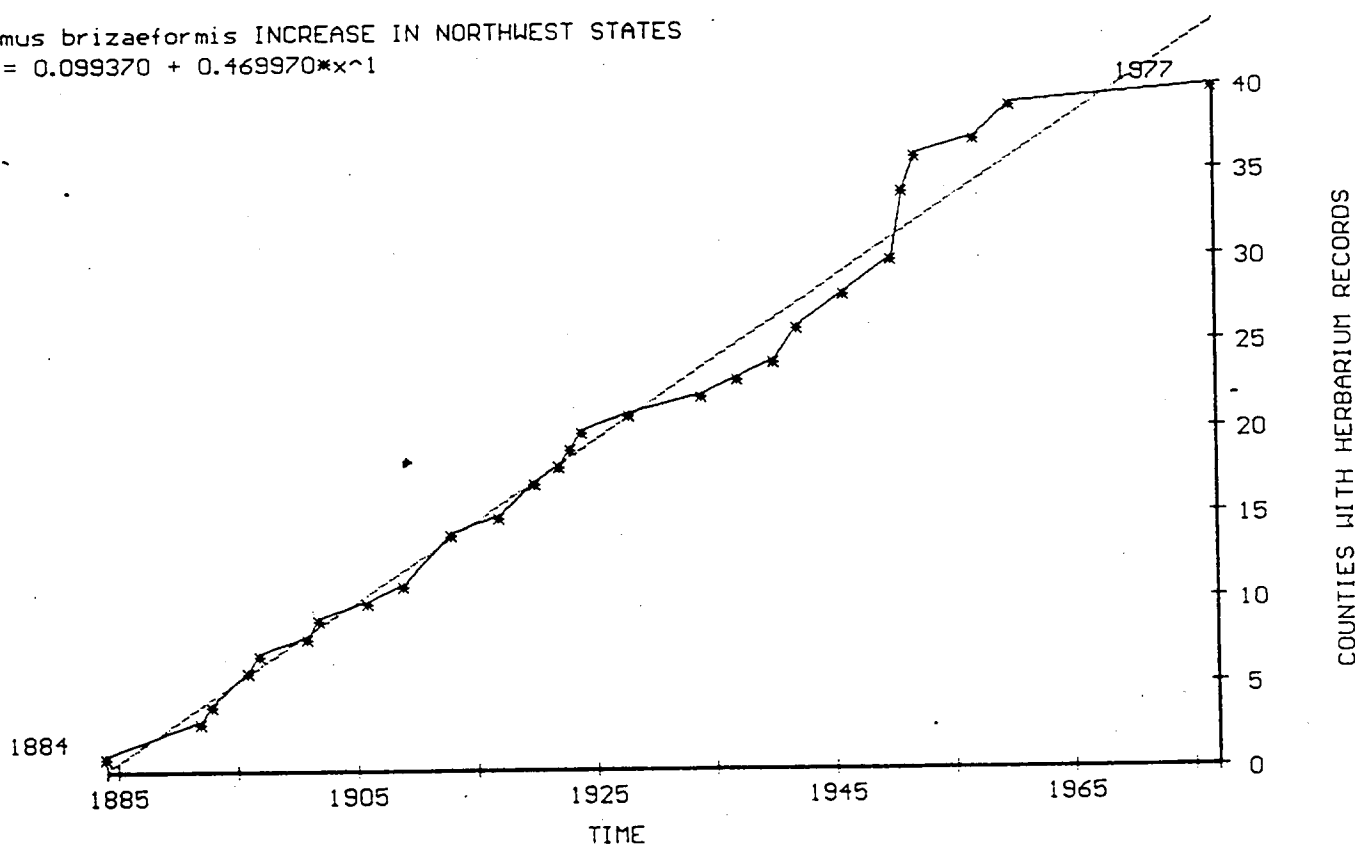
Brassica kaber INCREASE IN NORTHWEST STATES
 $y = 4.082302 + 0.196662 * x^1 + 0.002189 * x^2$



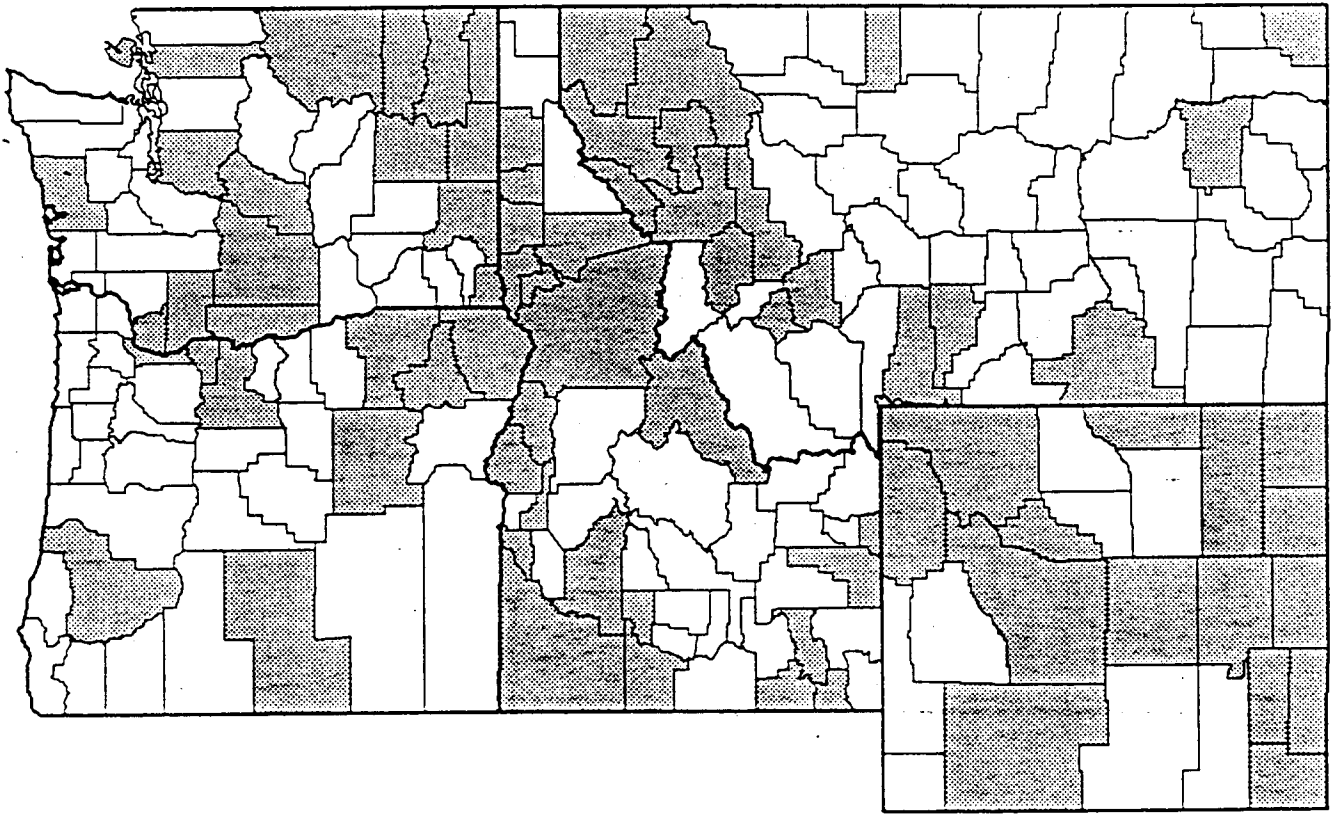
Counties reporting the exotic *Bromus brizaeformis* (rattlesnake brome), 1875-1992.



Bromus brizaeformis INCREASE IN NORTHWEST STATES
 $y = 0.099370 + 0.469970 * x^1$

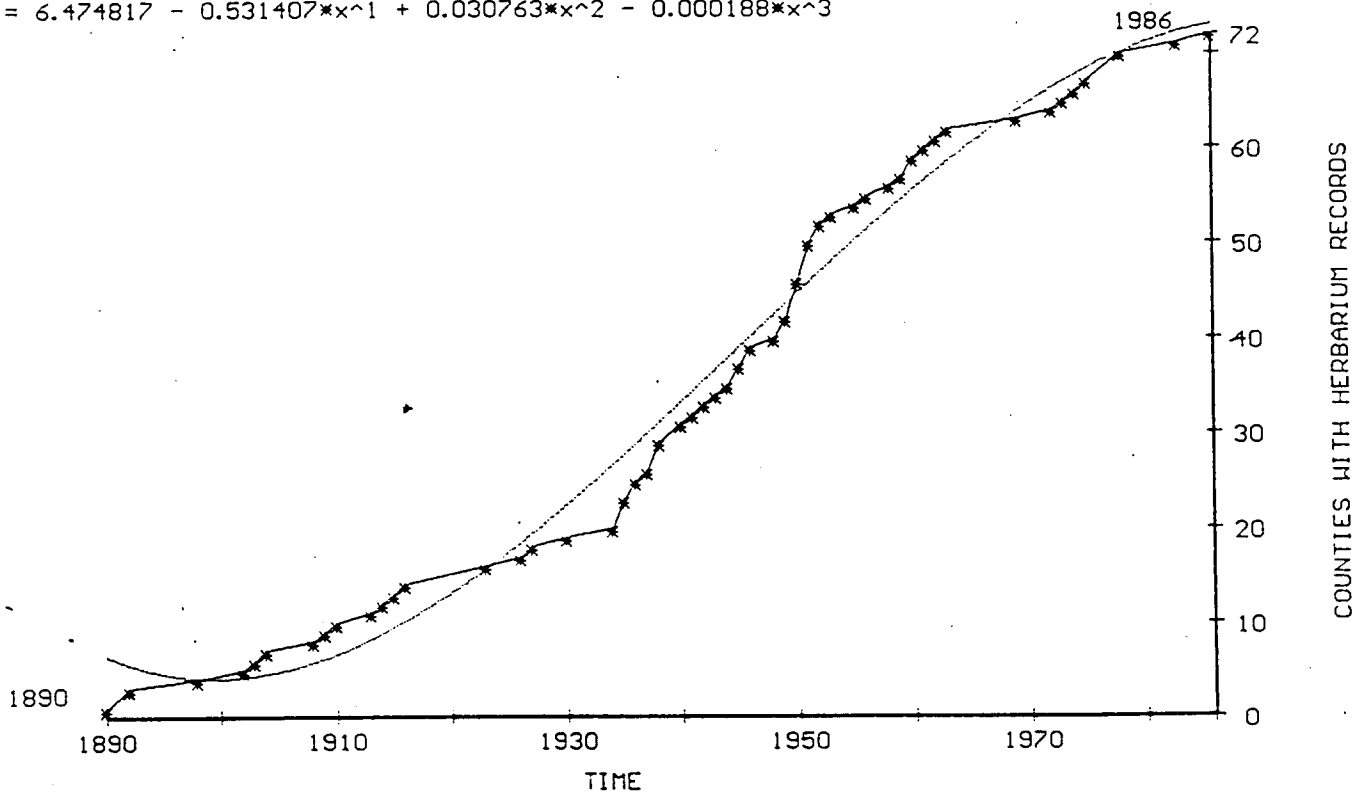


Counties reporting the exotic *Bromus commutatus* (hairy chess), 1875-1994.

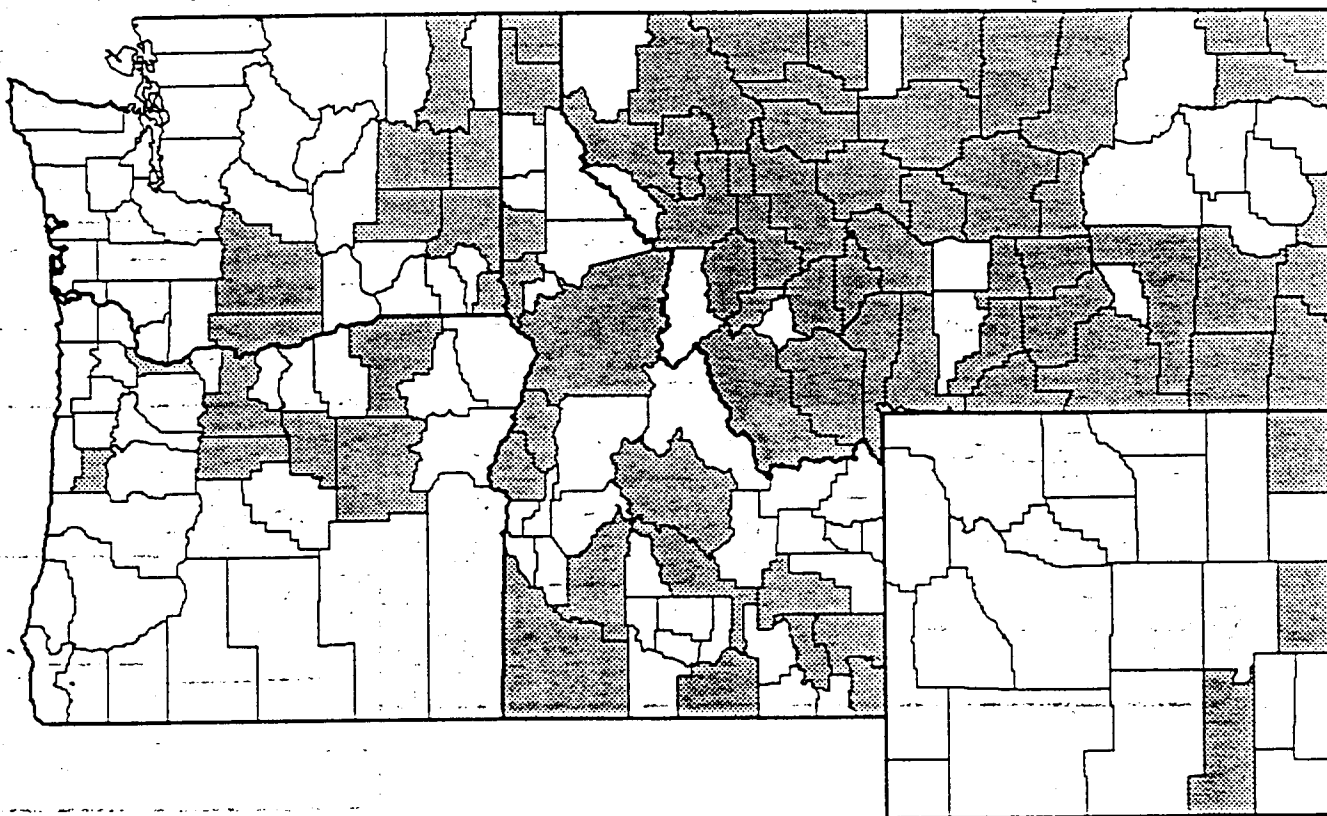


Bromus commutatus INCREASE IN NORTHWEST STATES

$$y = 6.474817 - 0.531407 * x^1 + 0.030763 * x^2 - 0.000188 * x^3$$

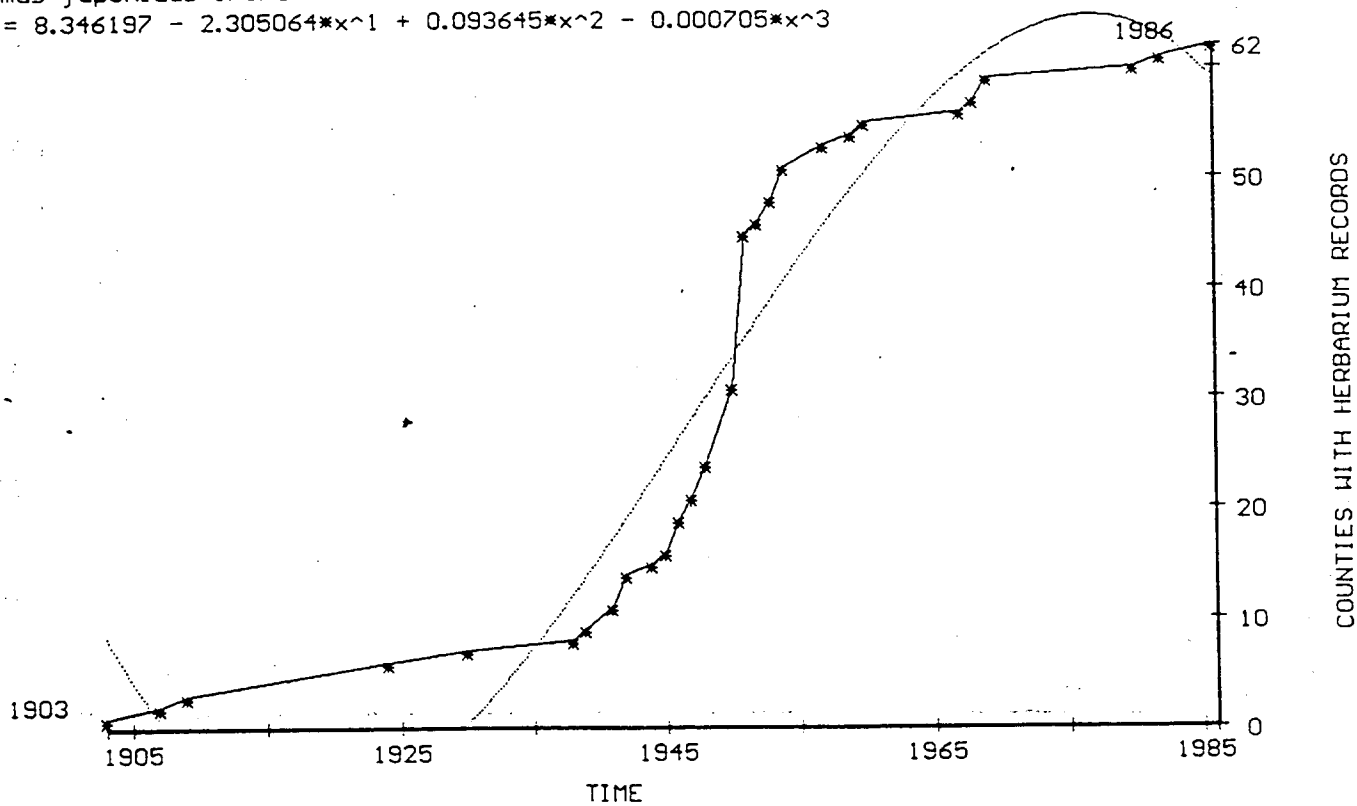


Counties reporting the exotic *Bromus japonicus* (Japanese brome), 1875-1993.

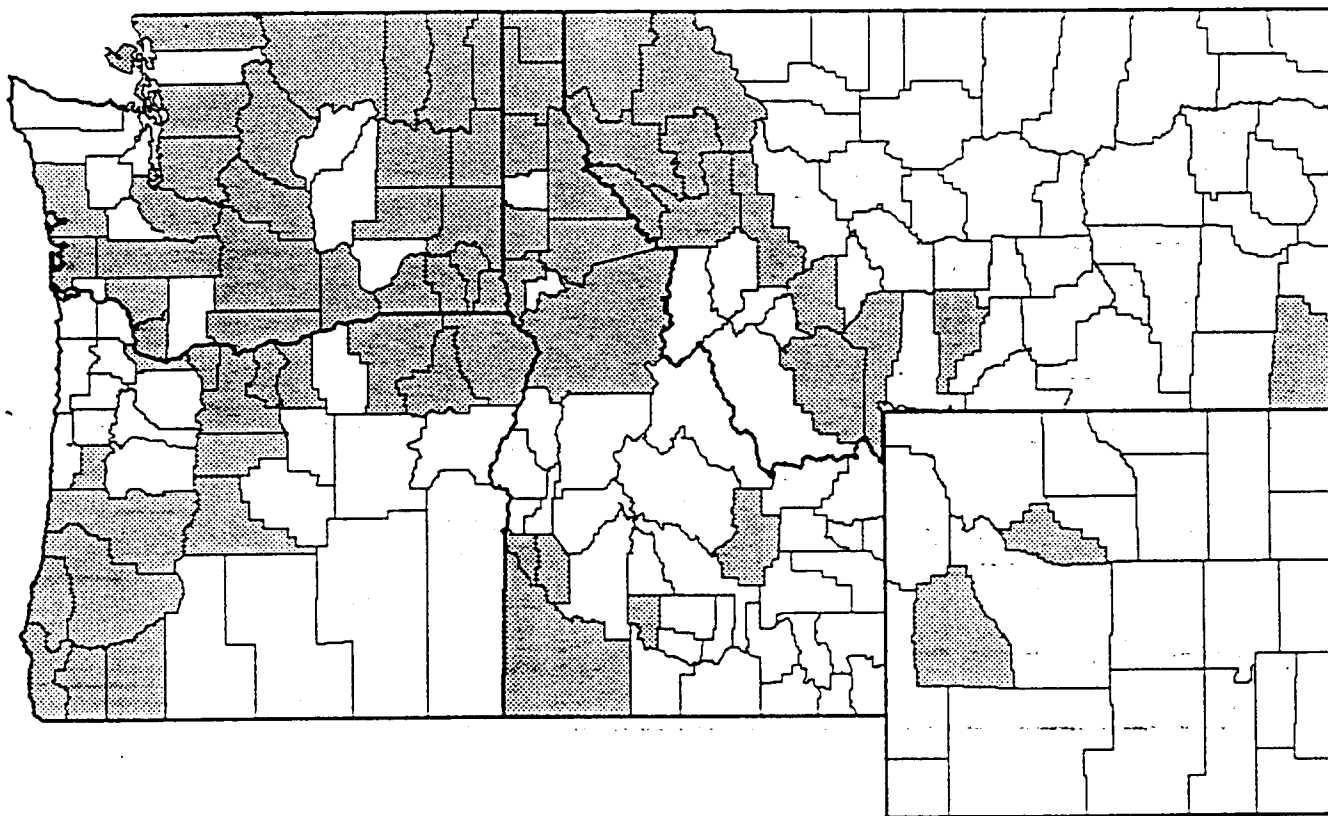


Bromus japonicus INCREASE IN NORTHWEST STATES

$$y = 8.346197 - 2.305064 * x^1 + 0.093645 * x^2 - 0.000705 * x^3$$

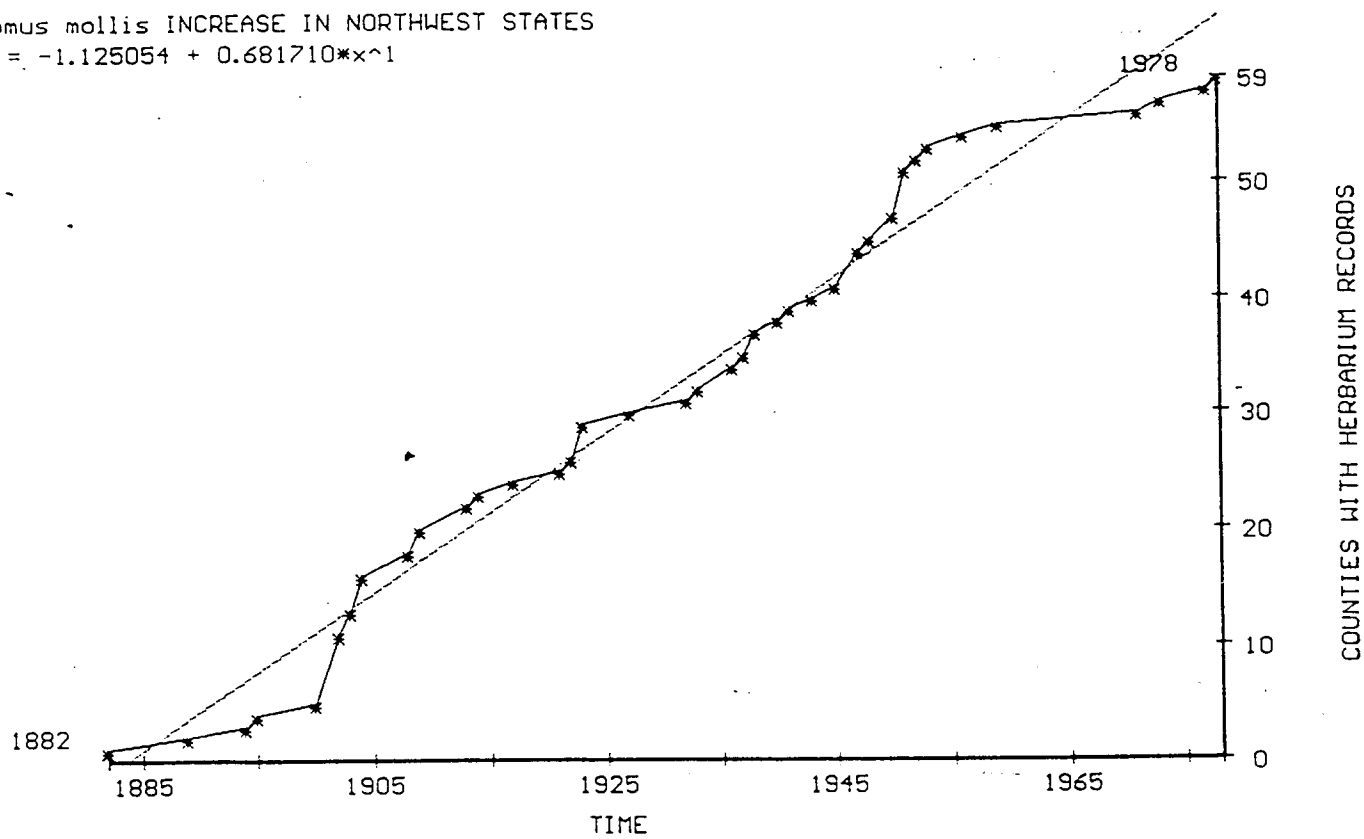


Counties reporting the exotic *Bromus mollis* (soft brome), 1875-1993.

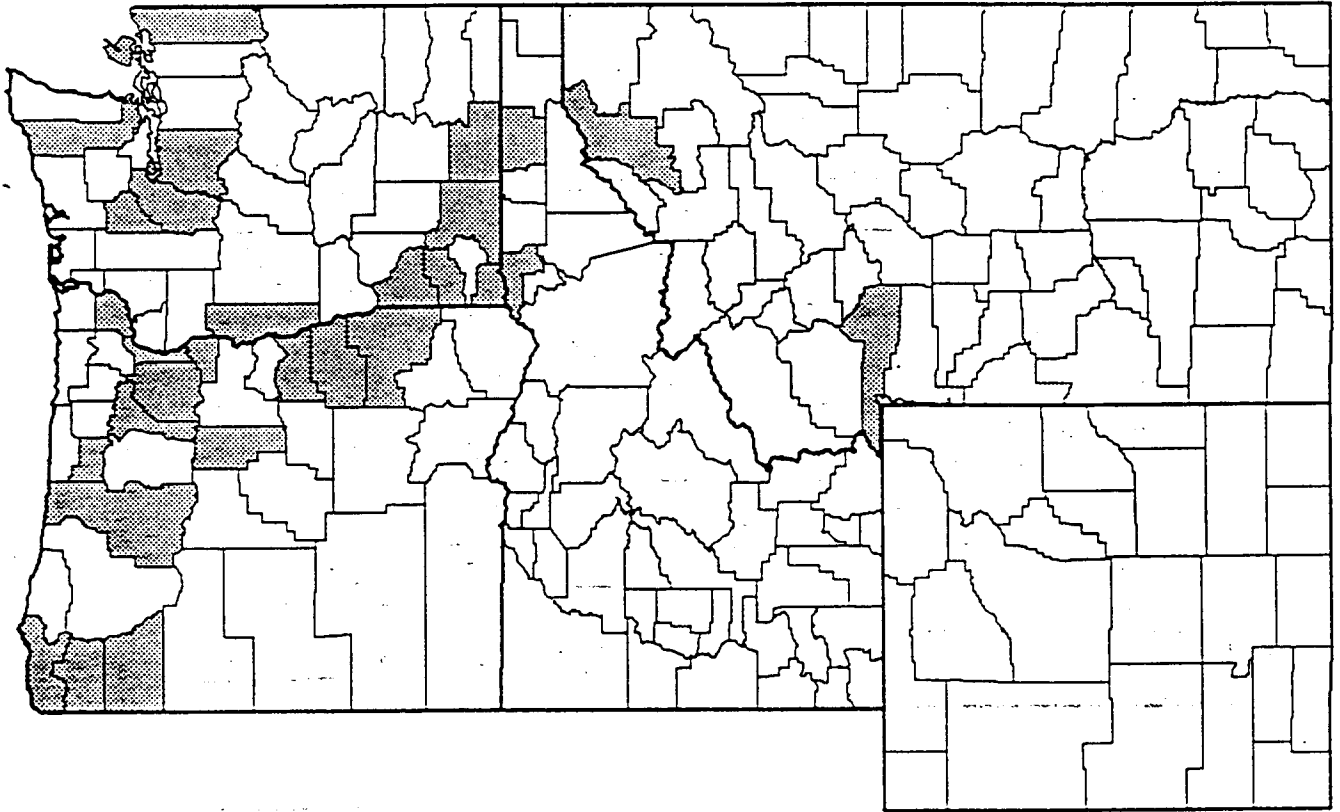


Bromus mollis INCREASE IN NORTHWEST STATES

$$y = -1.125054 + 0.681710 * x^1$$

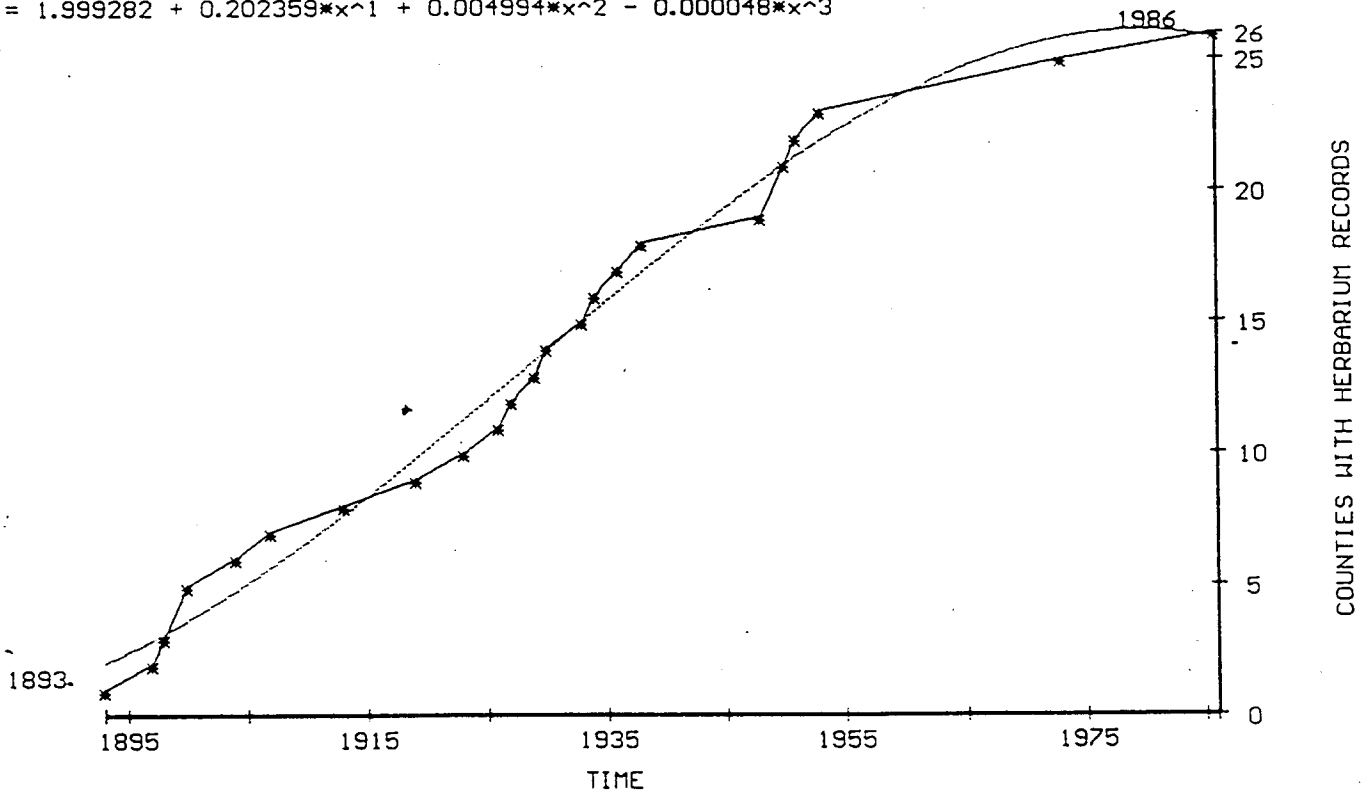


Counties reporting the exotic *Bromus rigidus* (ripgut brome), 1875-1989.

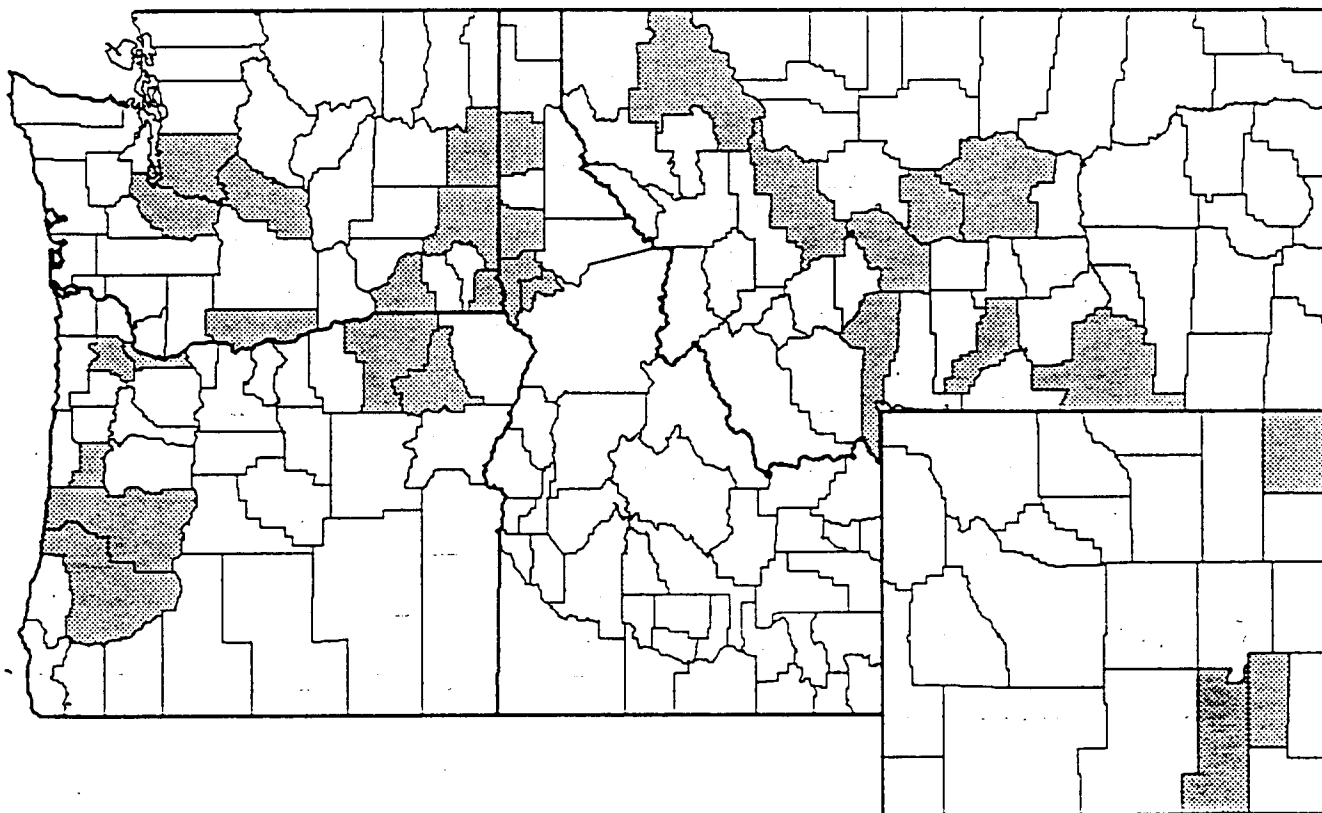


Bromus rigidus INCREASE IN NORTHWEST STATES

$$y = 1.999282 + 0.202359 * x^1 + 0.004994 * x^2 - 0.000048 * x^3$$

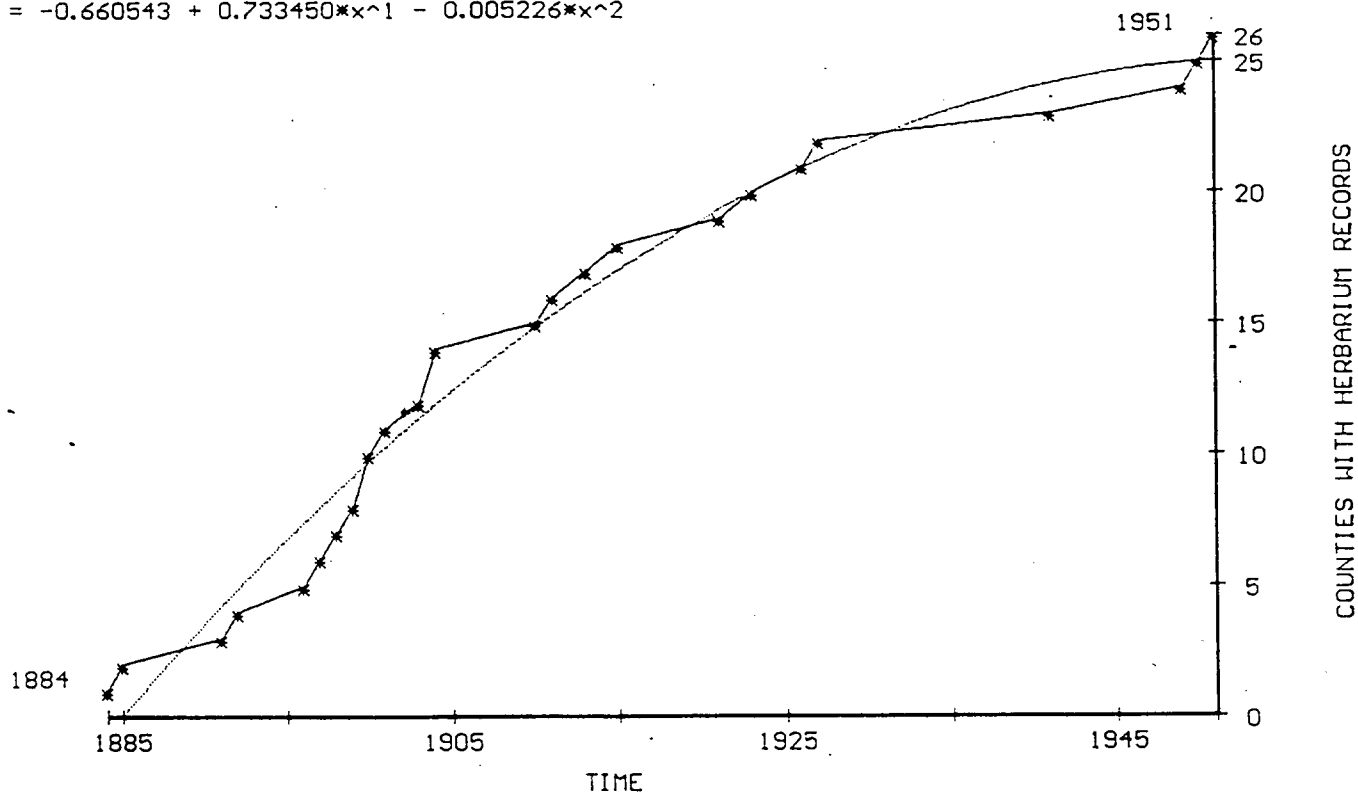


Counties reporting the exotic *Bromus secalinus* (cheat), 1875-1992.

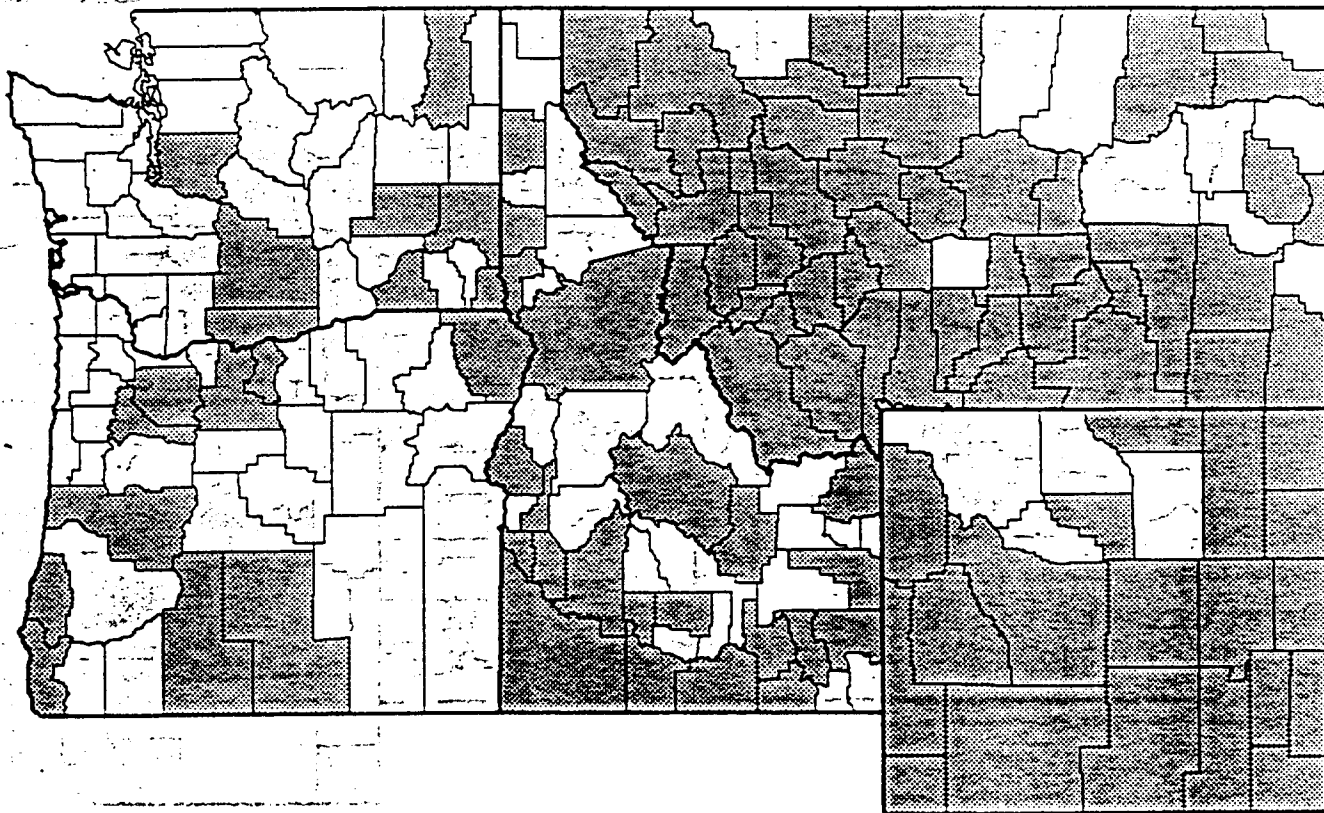


Bromus secalinus INCREASE IN NORTHWEST STATES

$$y = -0.660543 + 0.733450x^1 - 0.005226x^2$$

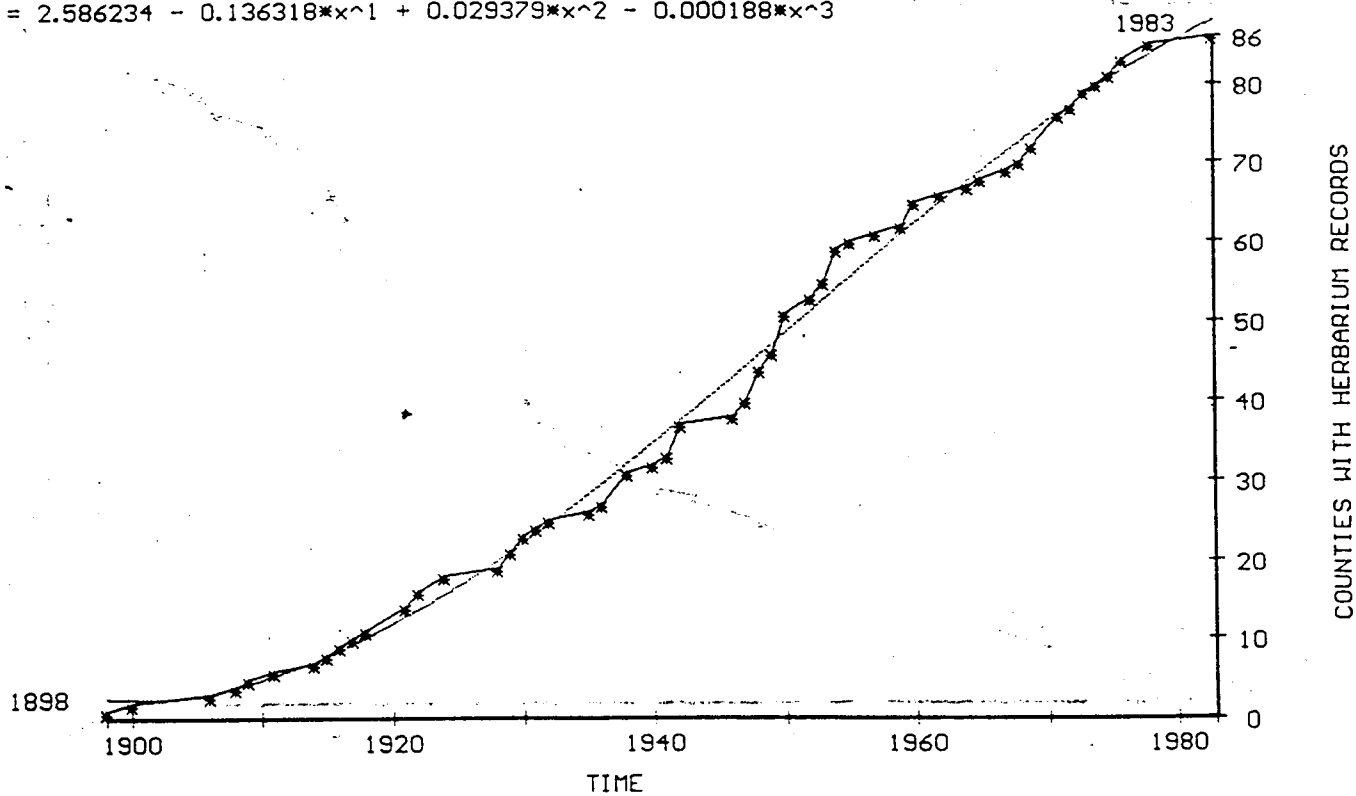


Counties reporting the exotic *Bromus tectorum* (downy brome), 1875-1994.

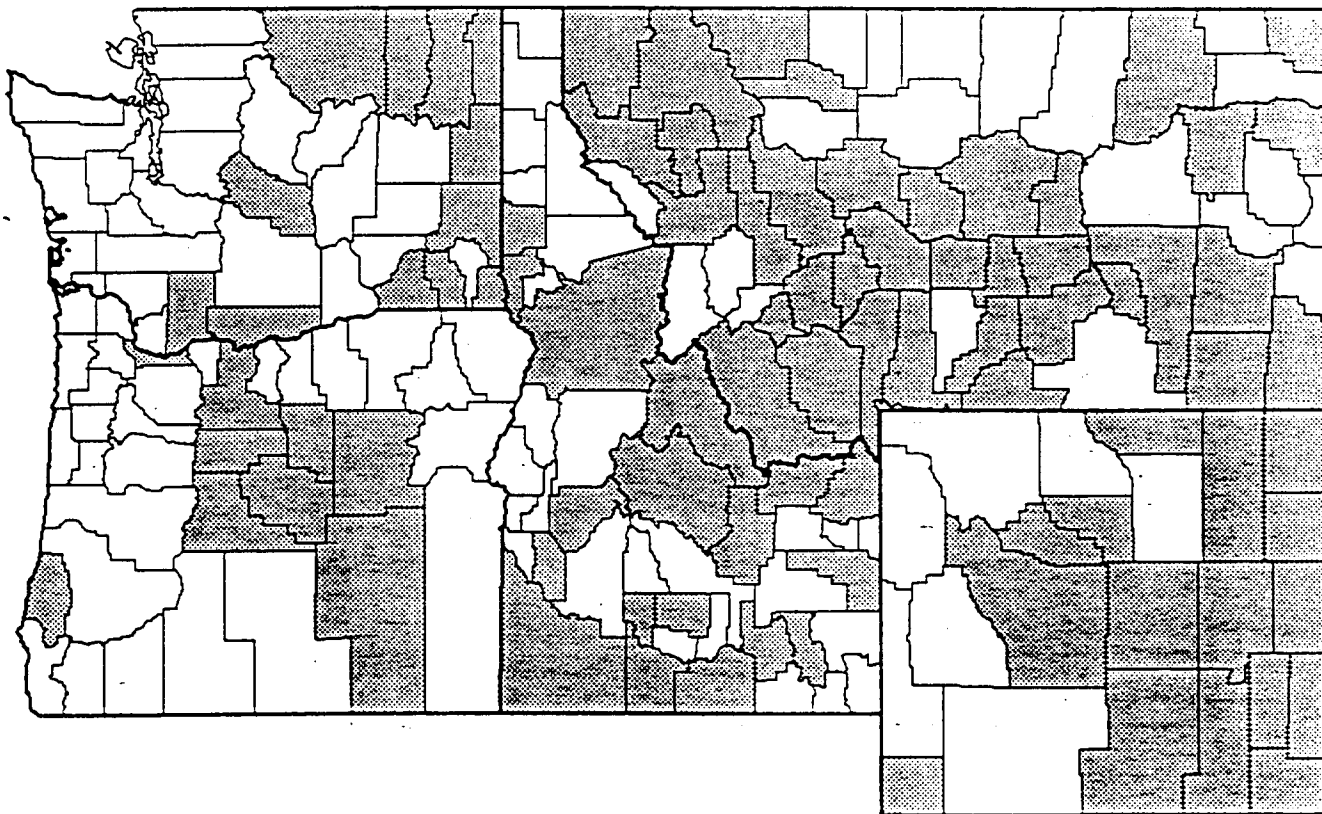


Bromus tectorum INCREASE IN NORTHWEST STATES

$$y = 2.586234 - 0.136318x^1 + 0.029379x^2 - 0.000188x^3$$

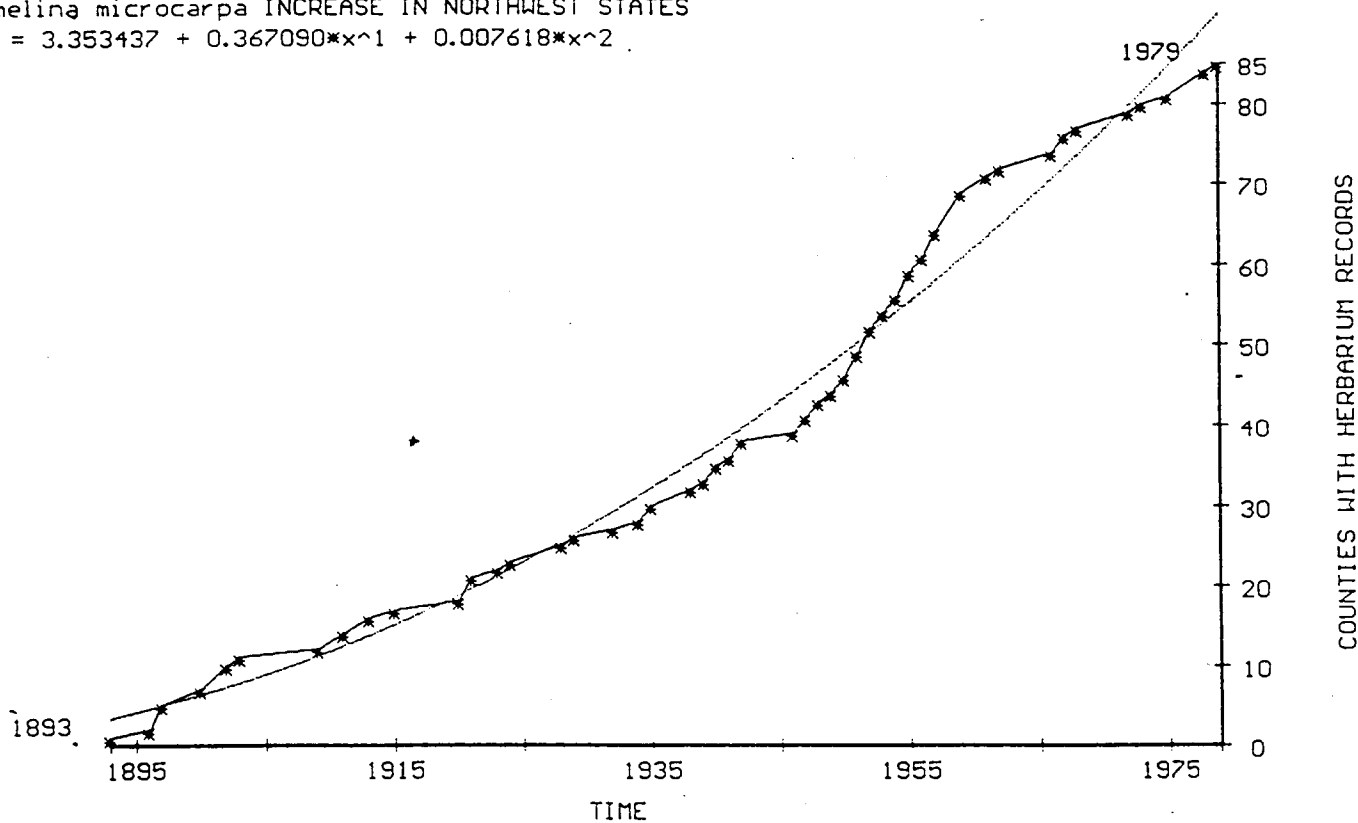


Counties reporting the exotic *Camelina microcarpa* (smallseed false flax), 1875-1992.

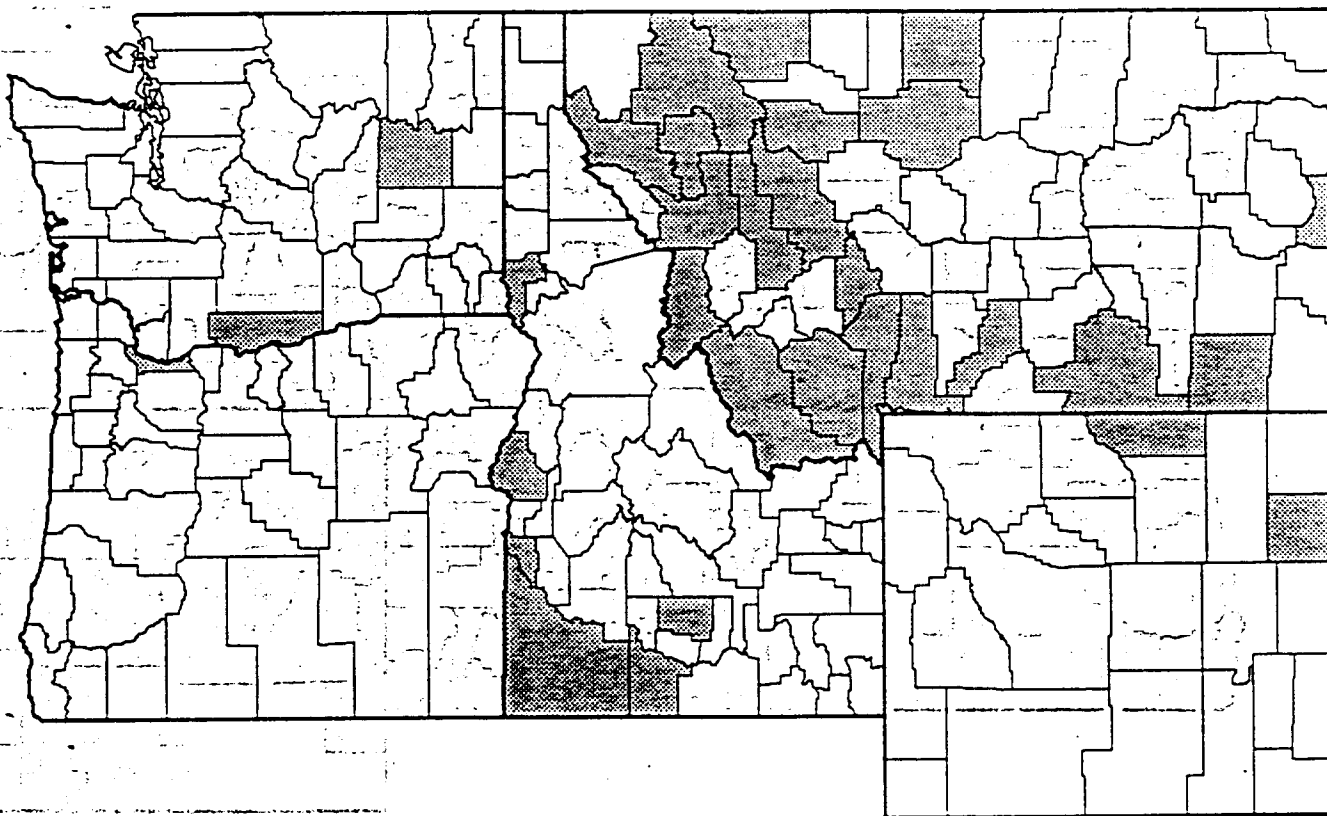


Camelina microcarpa INCREASE IN NORTHWEST STATES

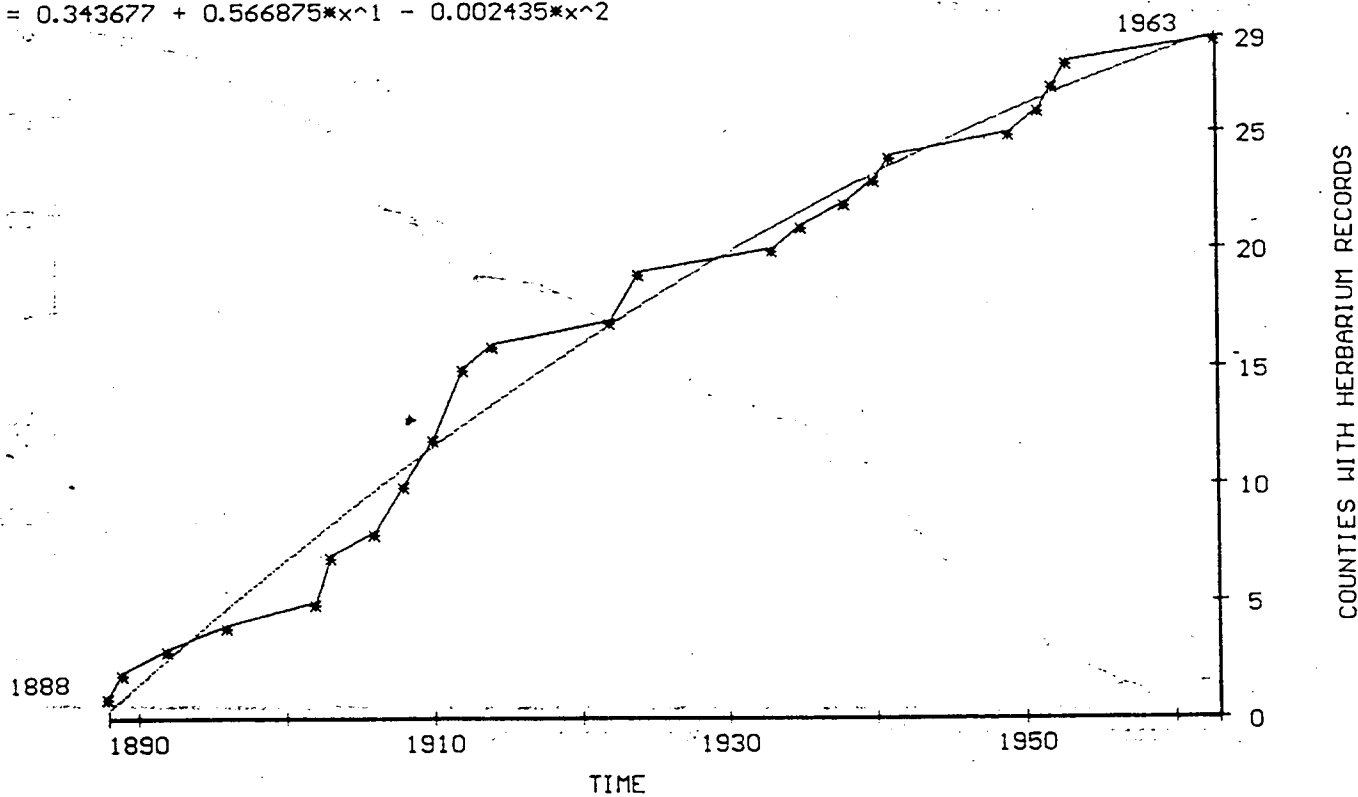
$$y = 3.353437 + 0.367090 \cdot x^1 + 0.007618 \cdot x^2$$



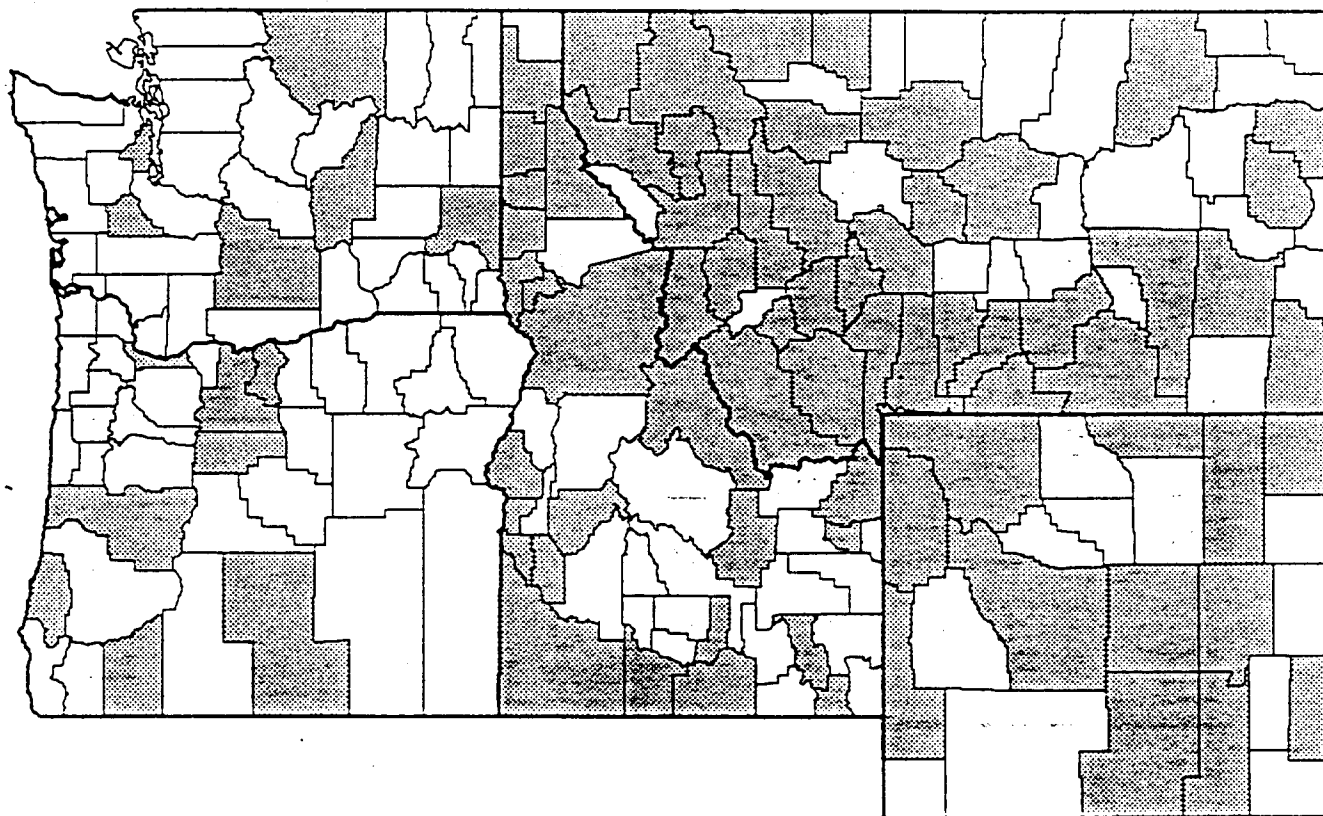
Counties reporting the exotic *Camelina sativa* (largeseed falseflax), 1875-1993.



Camelina sativa INCREASE IN NORTHWEST STATES
 $y = 0.343677 + 0.566875 * x^1 - 0.002435 * x^2$

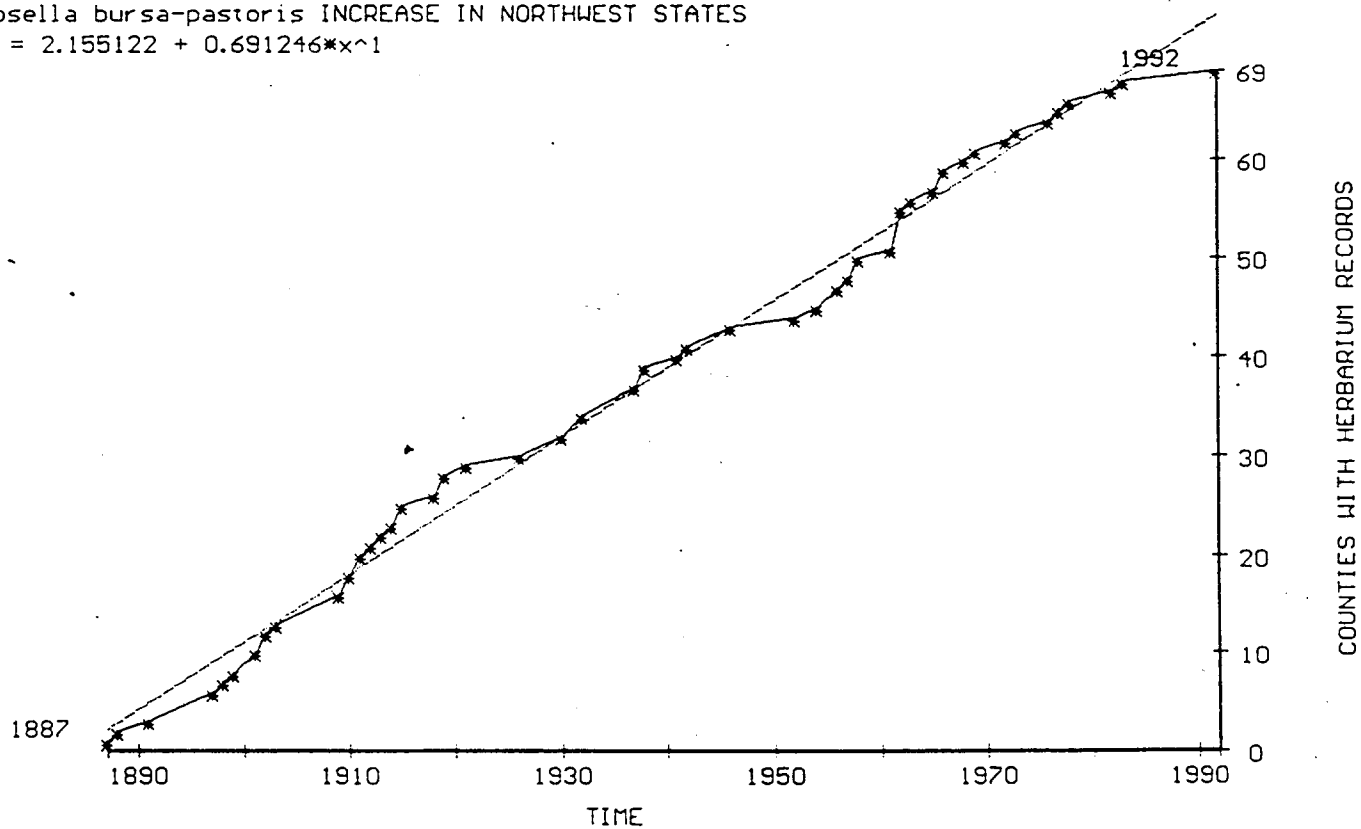


Counties reporting the exotic *Capsella bursa-pastoris* (shepherd's purse), 1875-1993.

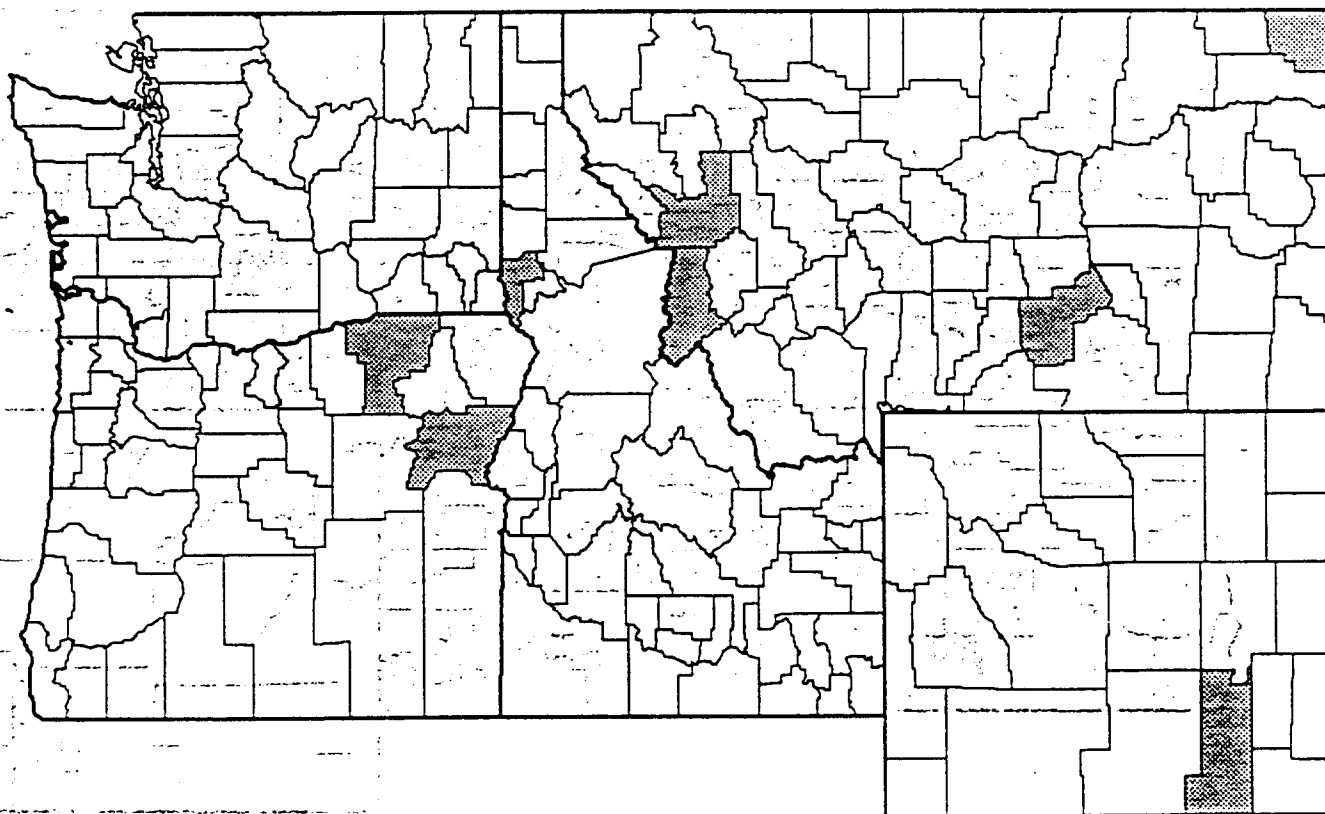


Capsella bursa-pastoris INCREASE IN NORTHWEST STATES

$$y = 2.155122 + 0.691246 * x^1$$

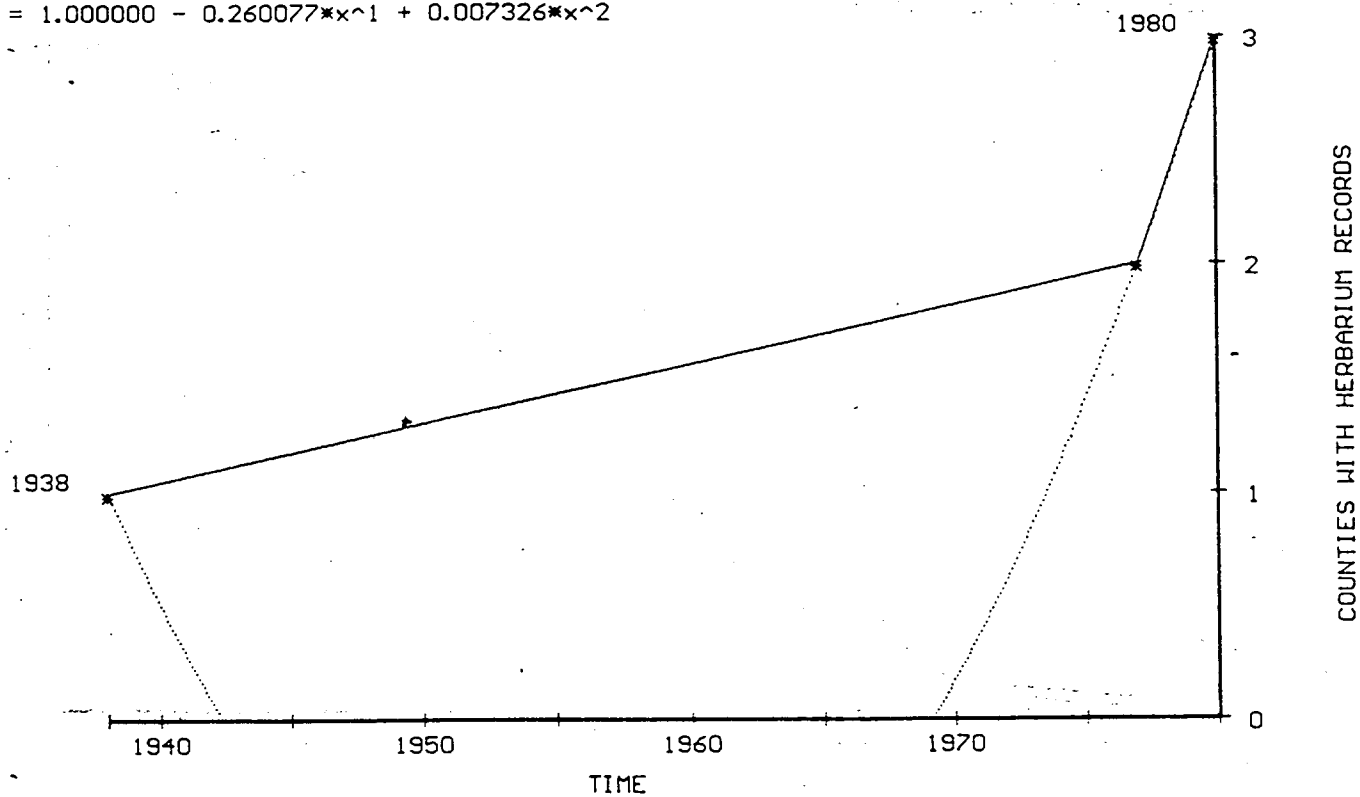


Counties reporting the exotic *Caragana arborescens* (caragana), -1875-1993.

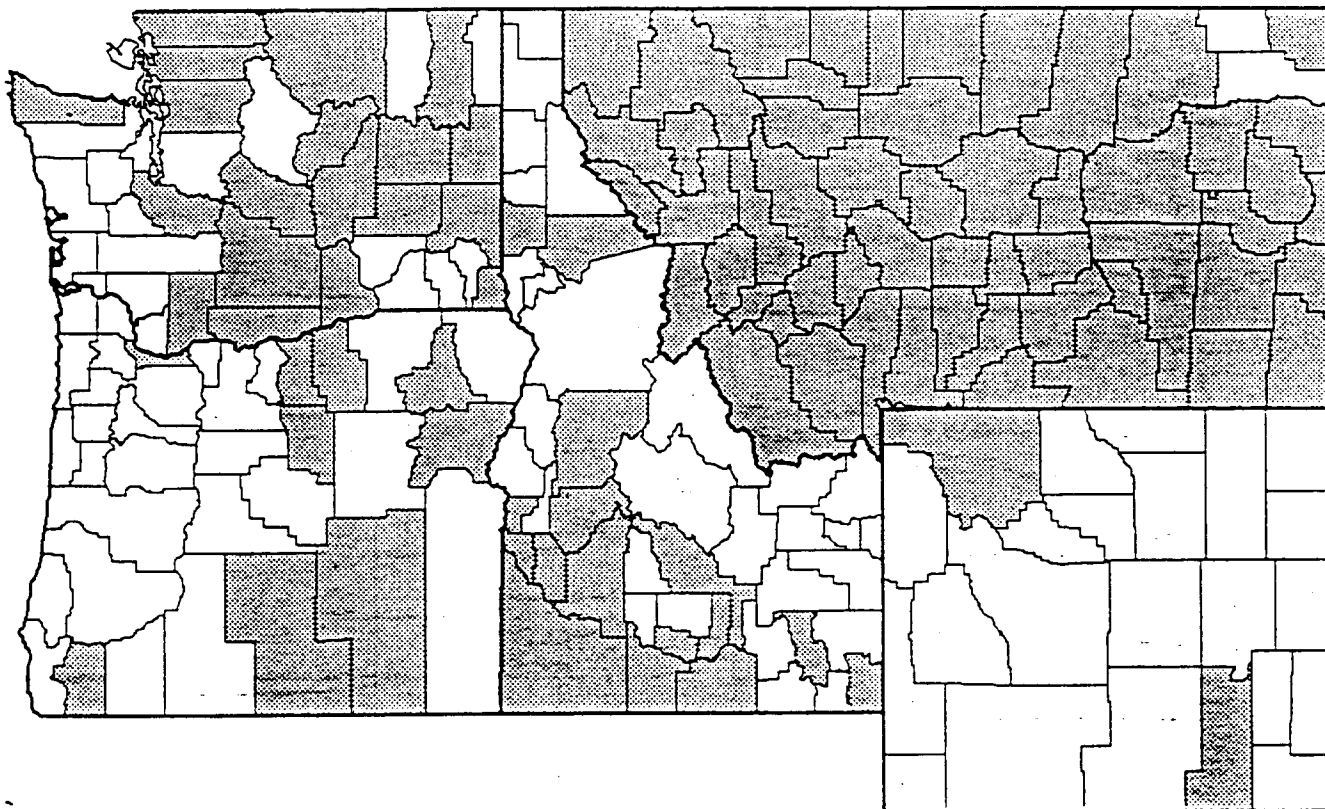


Caragana arborescens INCREASE IN NORTHWEST STATES

$$y = 1.000000 - 0.260077 * x^1 + 0.007326 * x^2$$

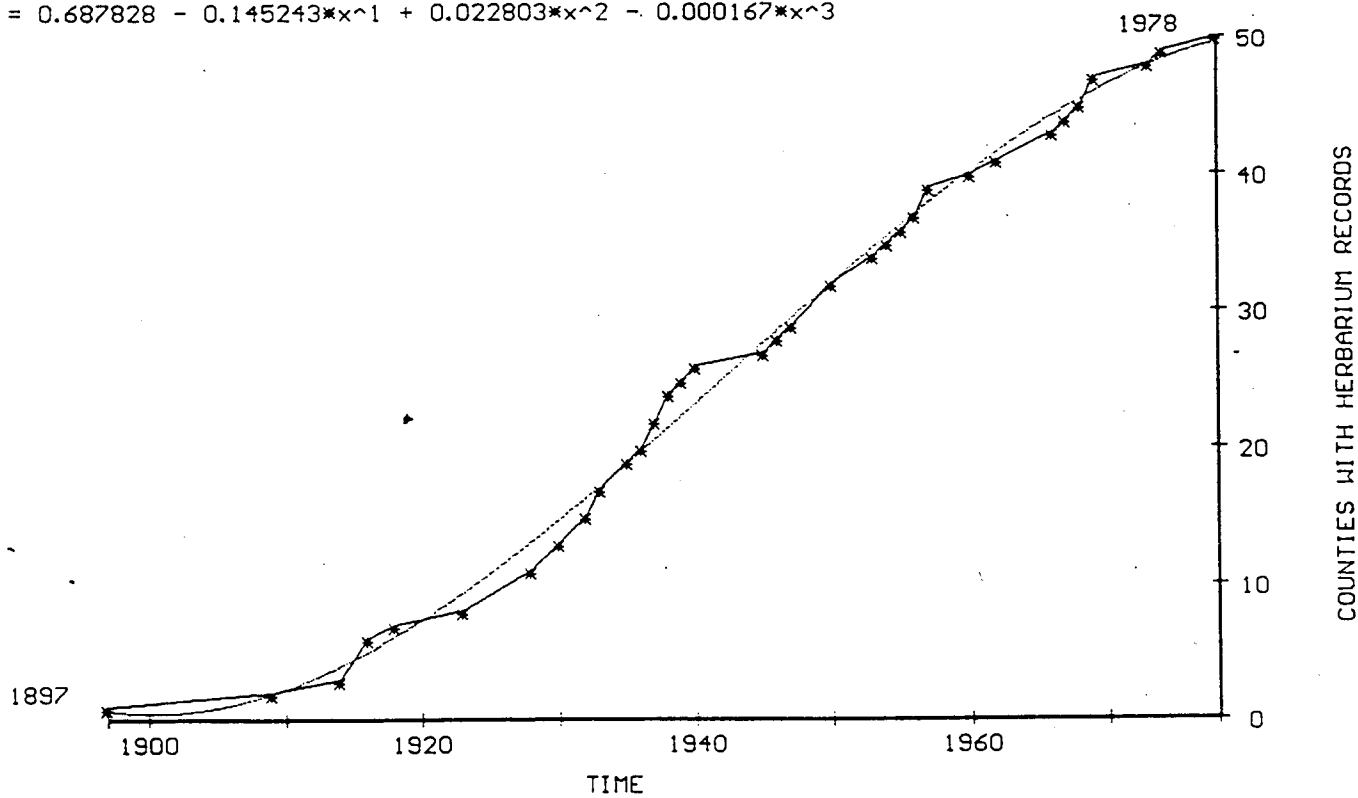


Counties reporting the exotic *Cardaria draba* (hoary cress), 1875-1993.

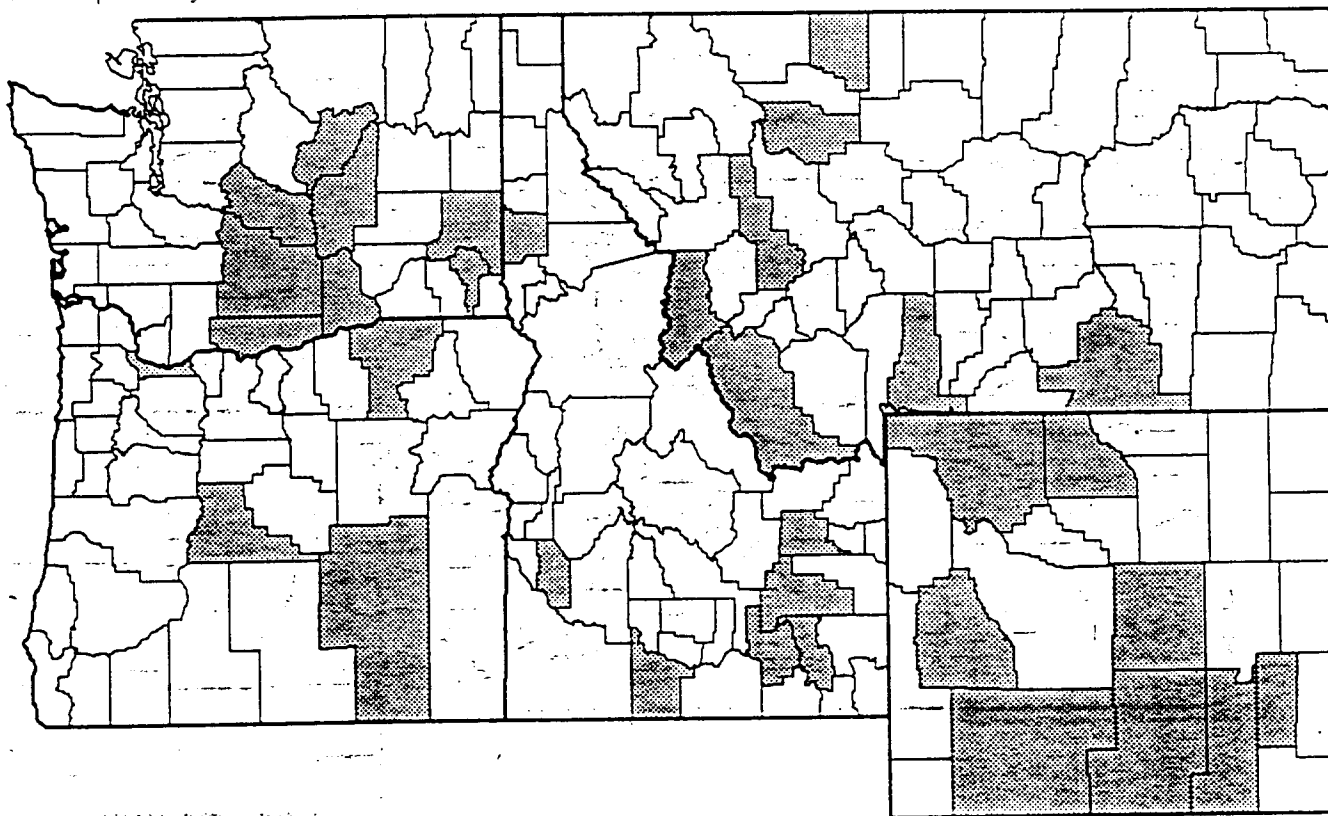


Cardaria draba INCREASE IN NORTHWEST STATES

$$y = 0.687828 - 0.145243x^1 + 0.022803x^2 - 0.000167x^3$$

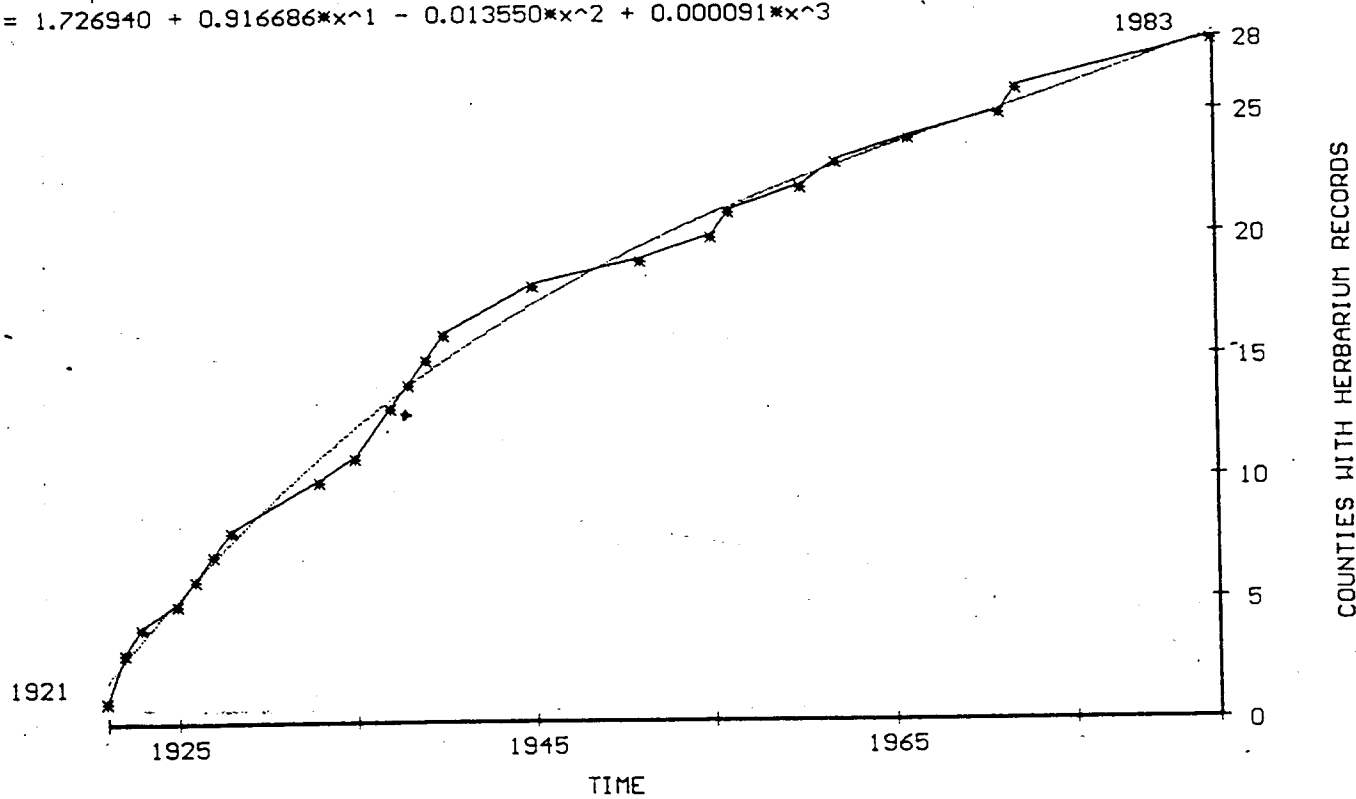


Counties reporting the exotic *Cardaria pubescens* (hairy whitetop), 1875-1990.

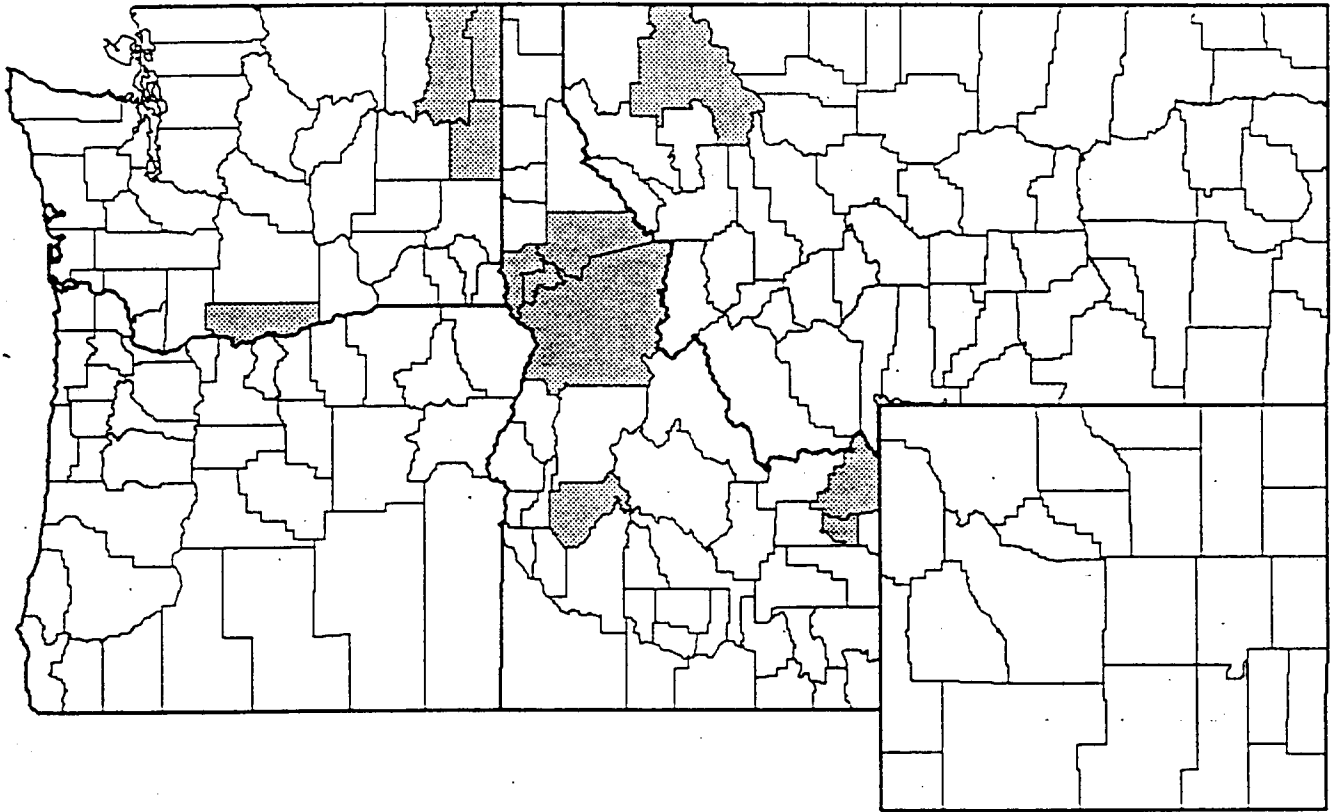


Cardaria pubescens INCREASE IN NORTHWEST STATES

$$y = 1.726940 + 0.916686 * x^1 - 0.013550 * x^2 + 0.000091 * x^3$$

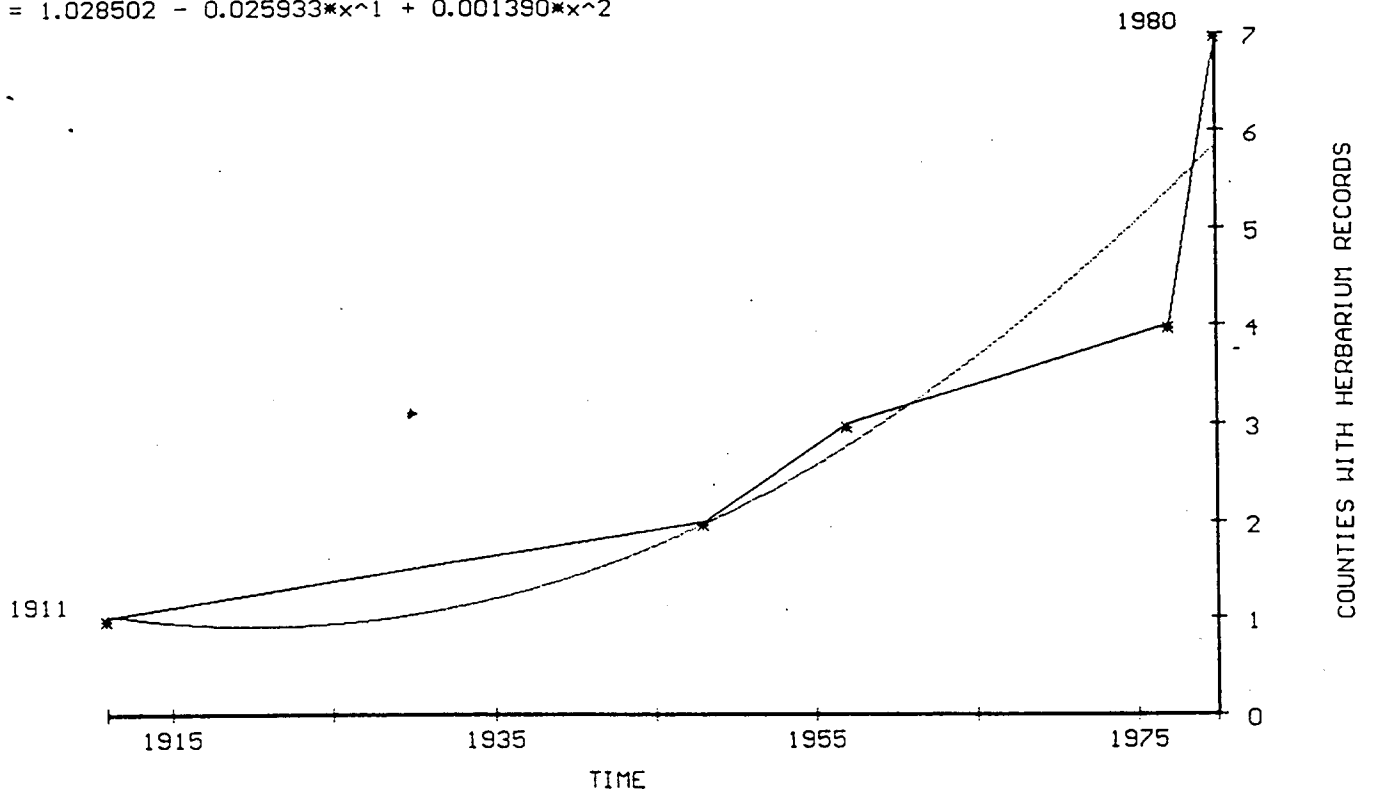


Counties reporting the exotic *Carduus acanthoides* (plumeless thistle), 1875-1991.

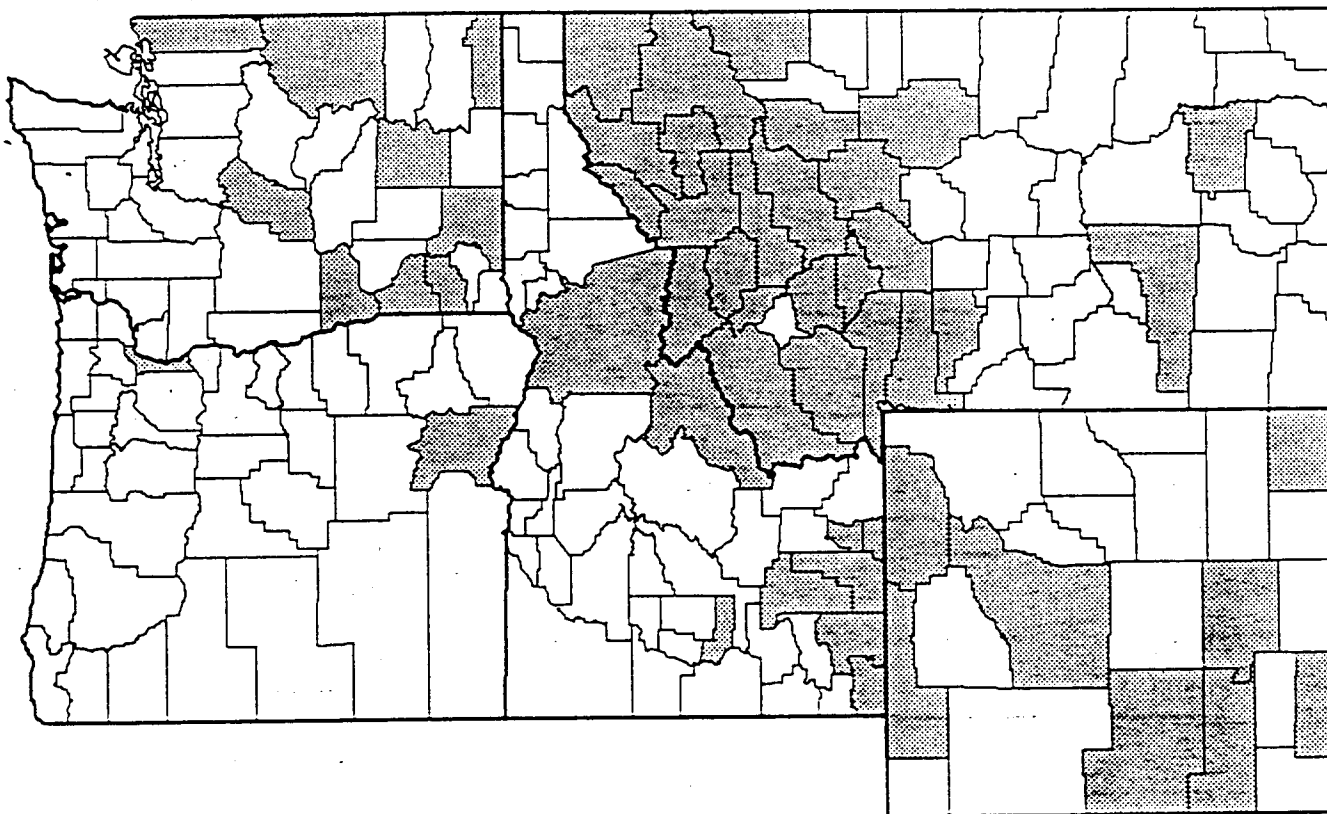


Carduus acanthoides INCREASE IN NORTHWEST STATES

$$y = 1.028502 - 0.025933 * x^1 + 0.001390 * x^2$$

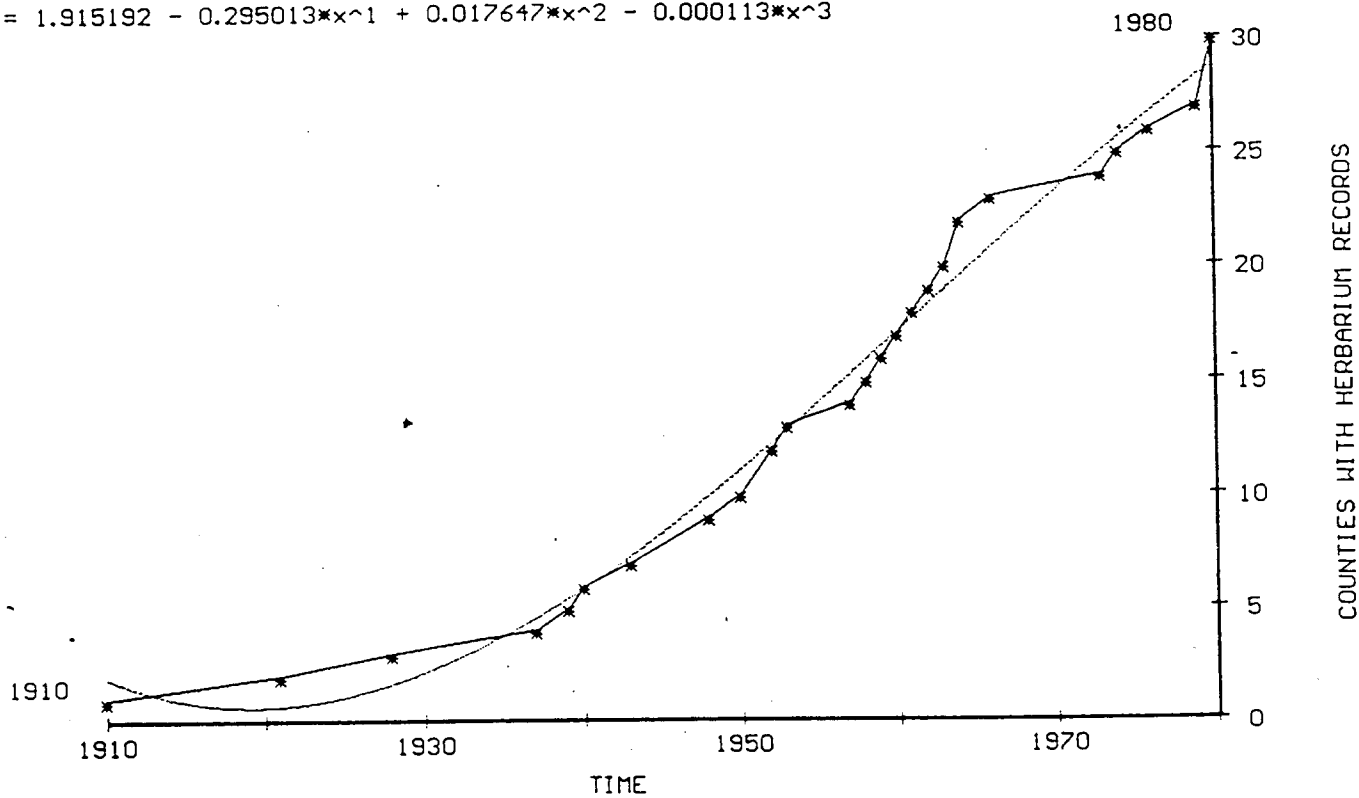


Counties reporting the exotic *Carduus nutans* (musk thistle), 1875-1993.

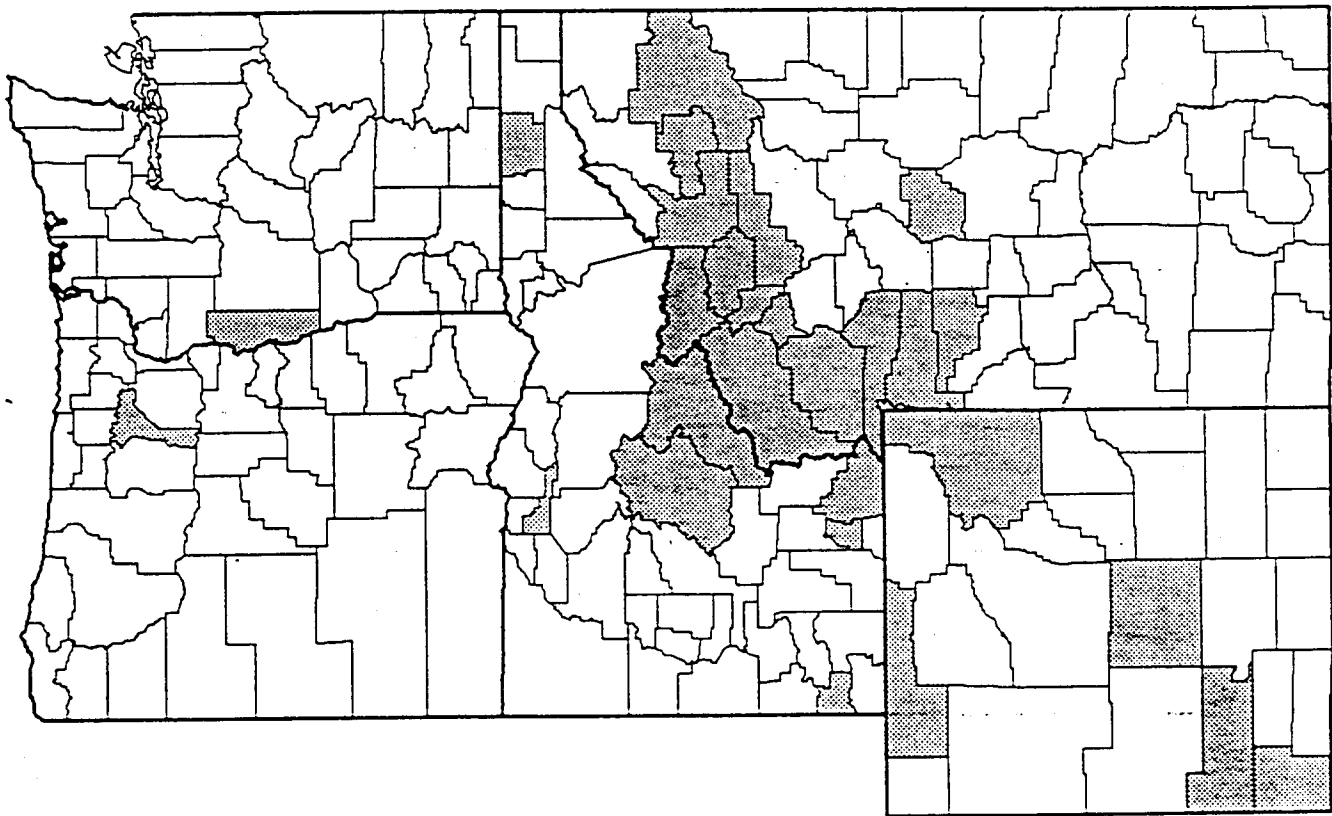


Carduus nutans INCREASE IN NORTHWEST STATES

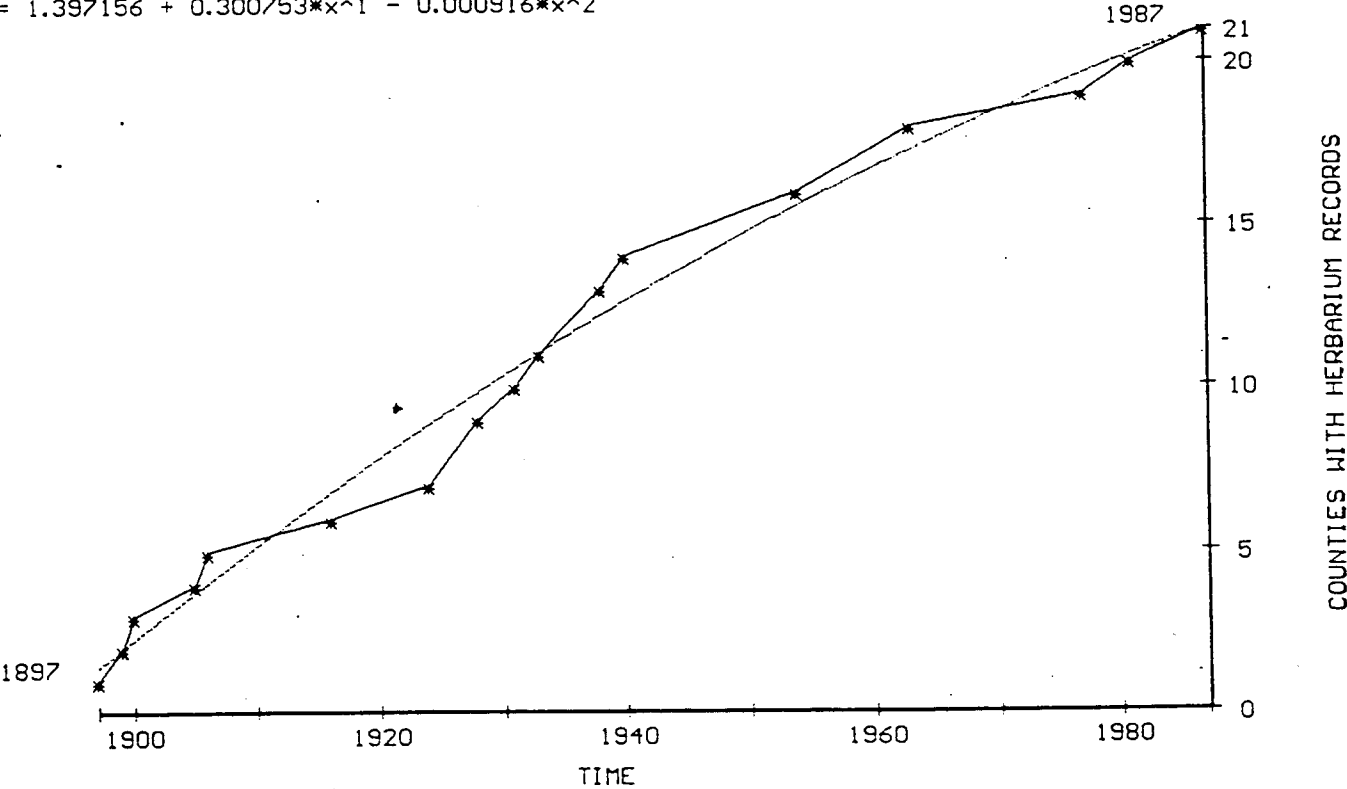
$$y = 1.915192 - 0.295013 \times x^1 + 0.017647 \times x^2 - 0.000113 \times x^3$$



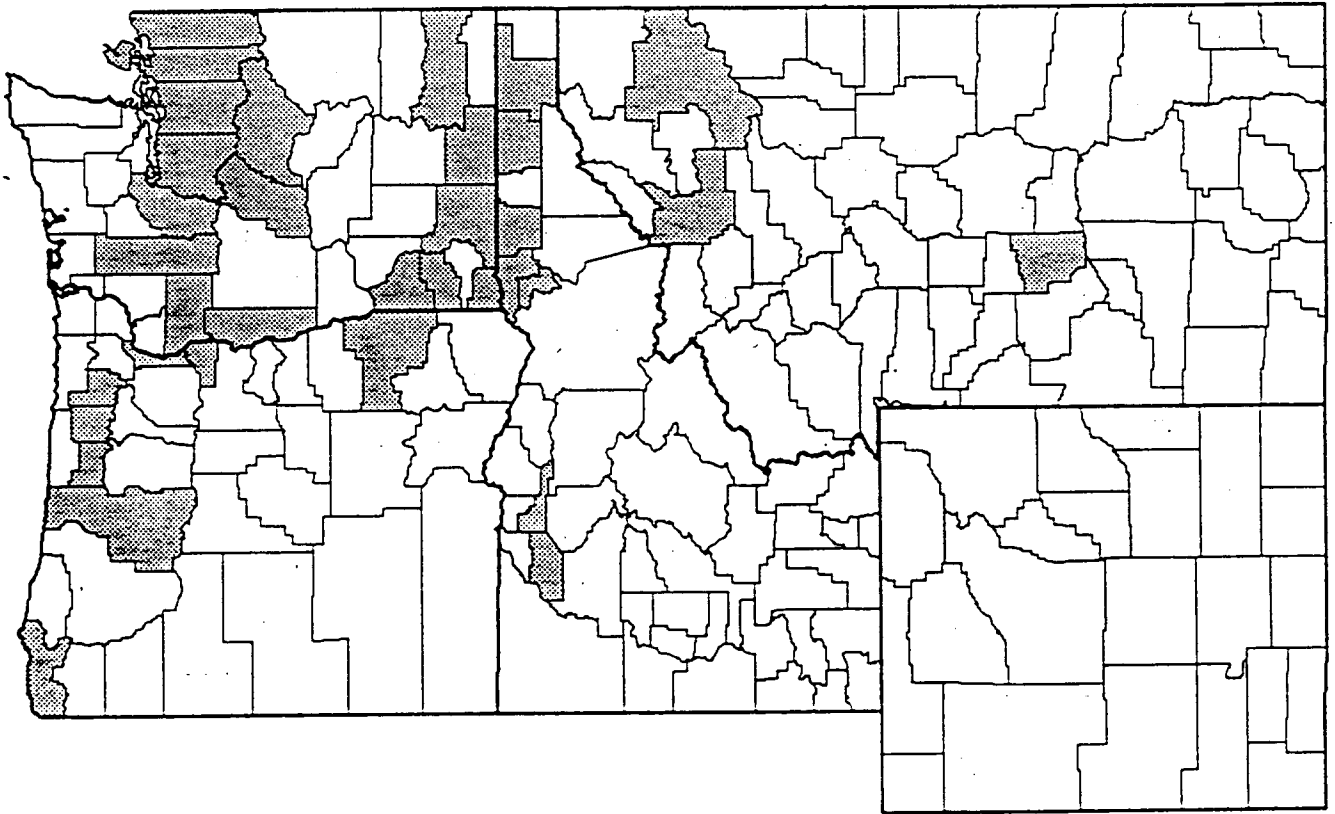
Counties reporting the exotic *Carum carvi* (common caraway), 1875-1992.



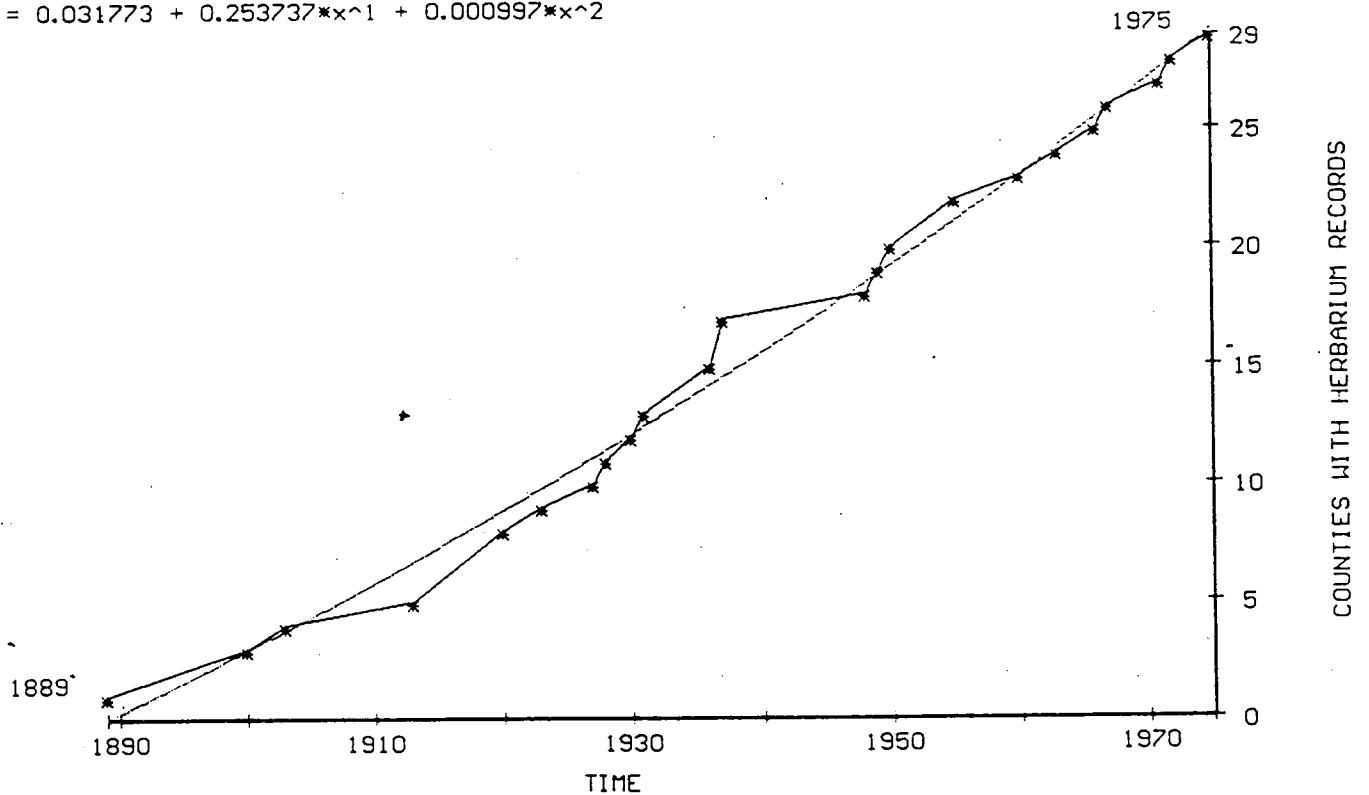
Carum carvi INCREASE IN NORTHWEST STATES
 $y = 1.397156 + 0.300753 * x^1 - 0.000916 * x^2$



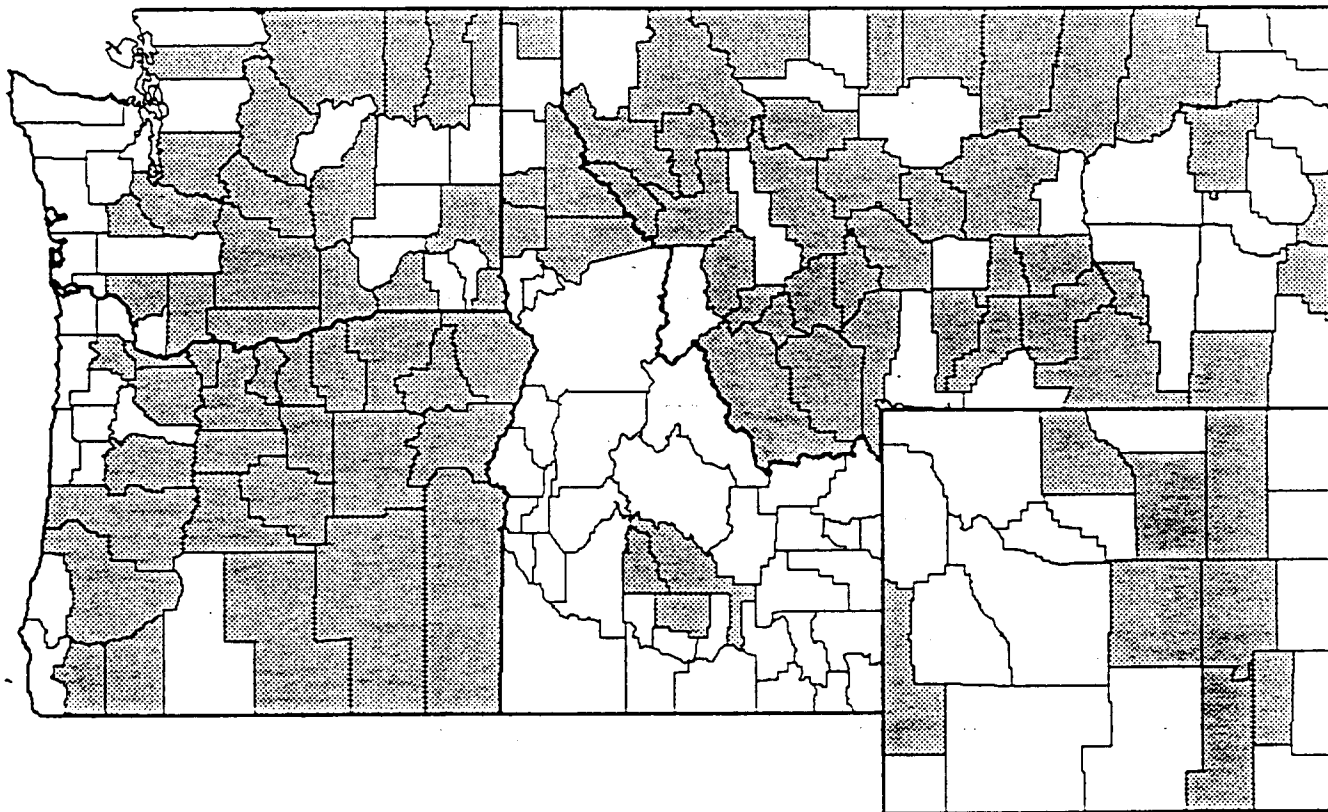
Counties reporting the exotic *Centaurea cyanus* (cornflower), 1875-1994.



Centaurea cyanus INCREASE IN NORTHWEST STATES
 $y = 0.031773 + 0.253737 * x^1 + 0.000997 * x^2$

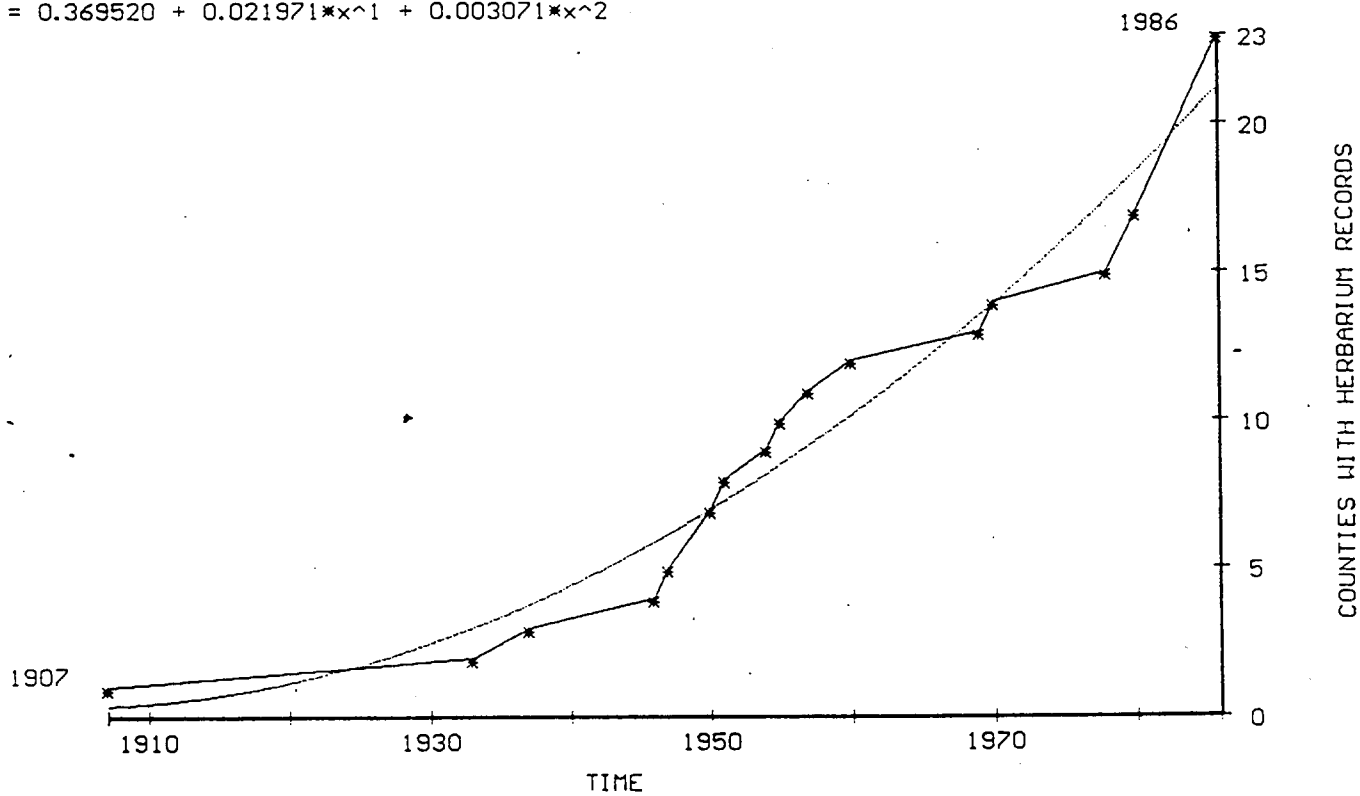


Counties reporting the exotic *Centaurea diffusa* (diffuse knapweed), 1875-1993.

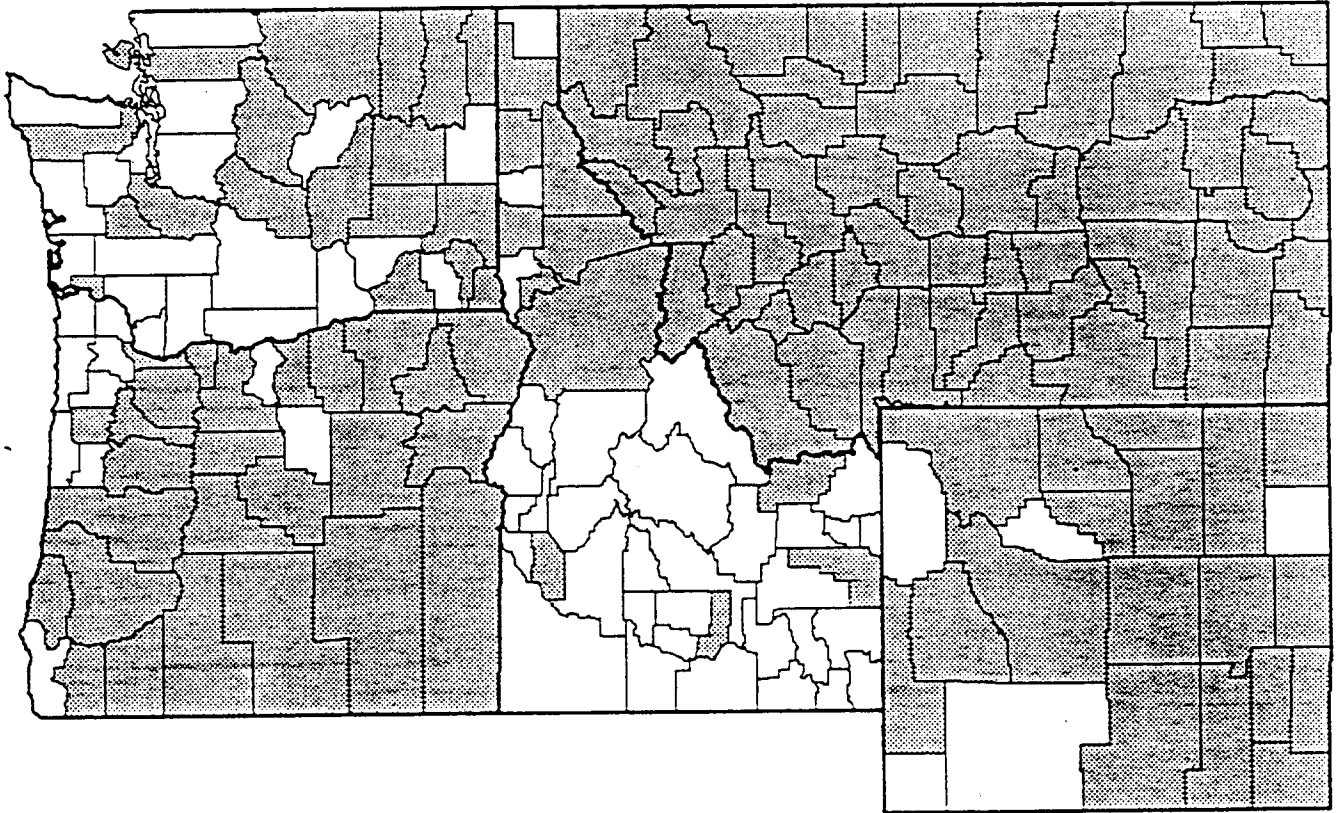


Centaurea diffusa INCREASE IN NORTHWEST STATES

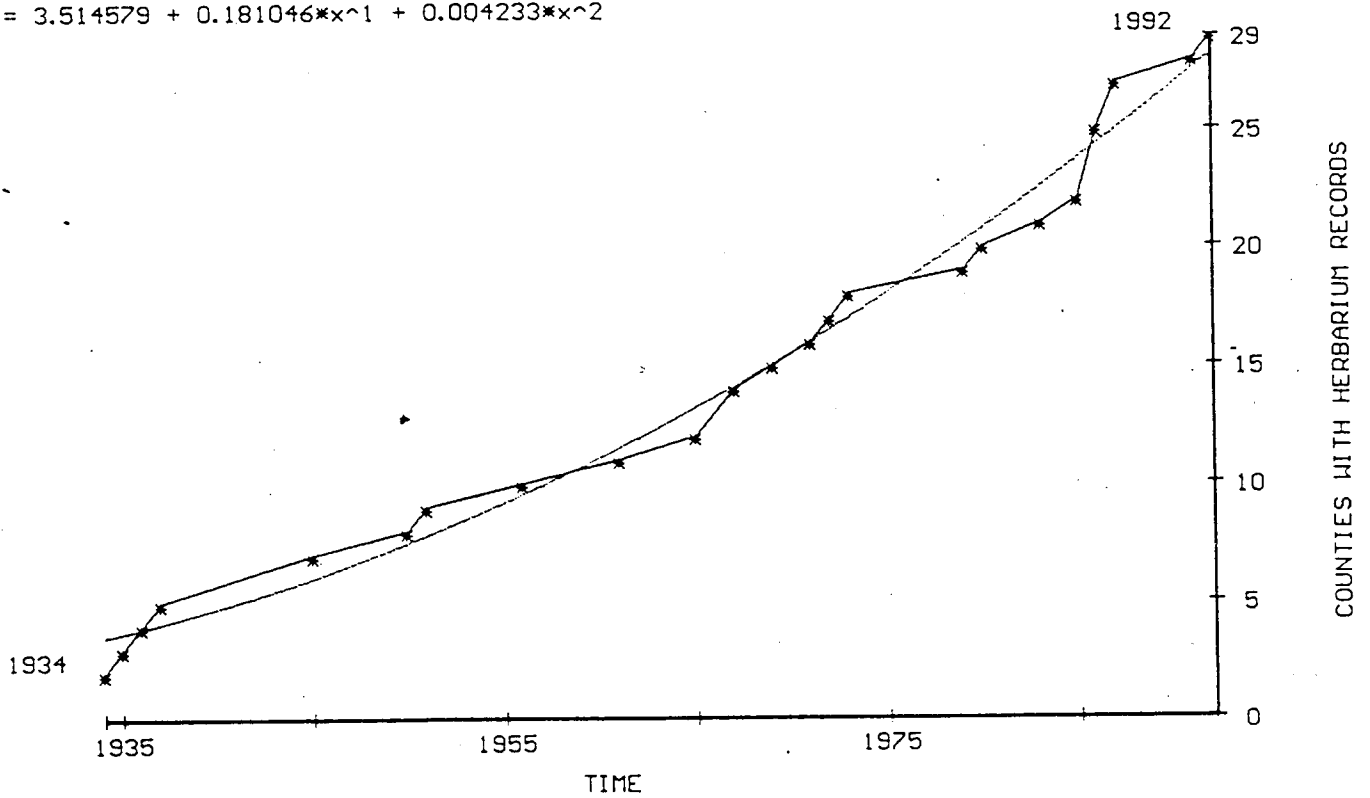
$$y = 0.369520 + 0.021971 * x^1 + 0.003071 * x^2$$



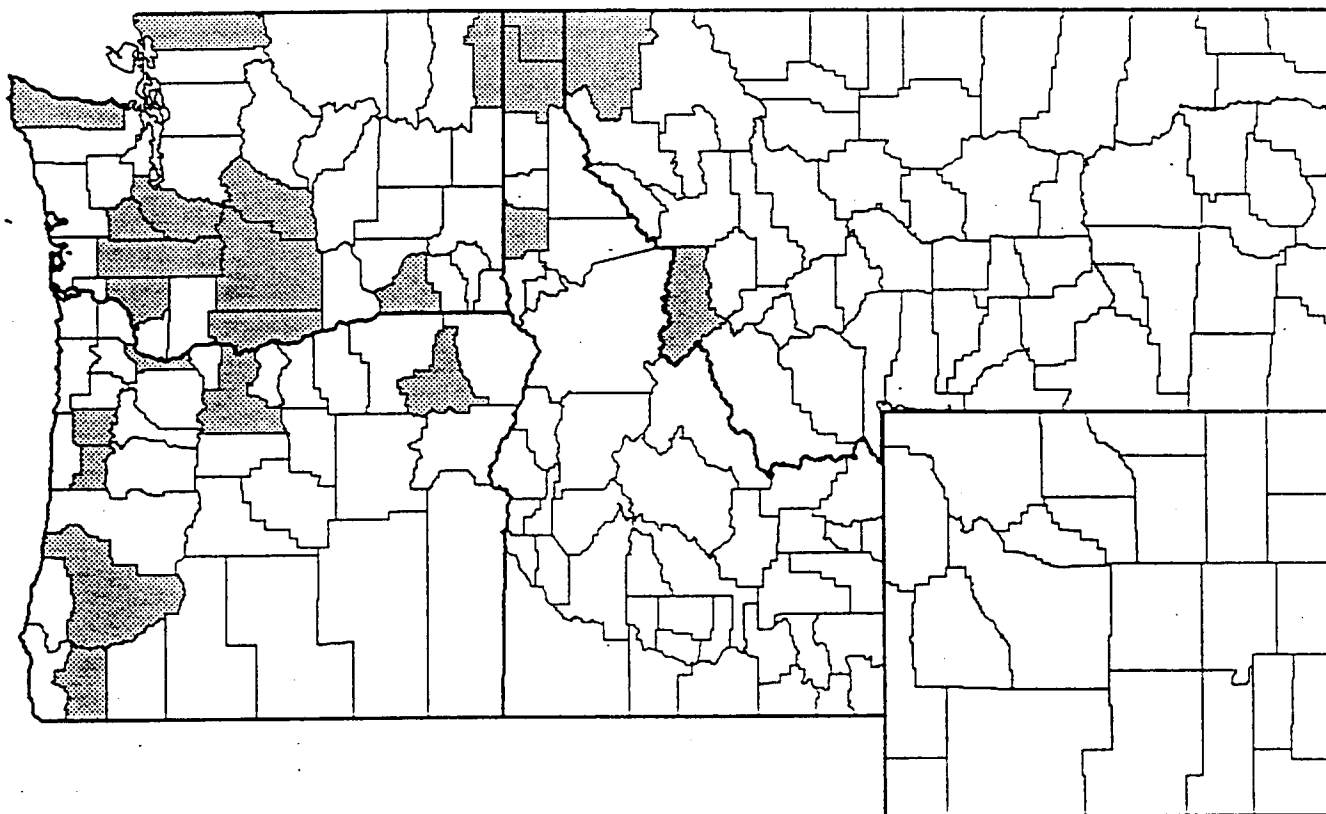
Counties reporting the exotic *Centaurea maculosa* (spotted knapweed), 1875-1994.



Centaurea maculosa INCREASE IN NORTHWEST STATES
 $y = 3.514579 + 0.181046 * x^1 + 0.004233 * x^2$

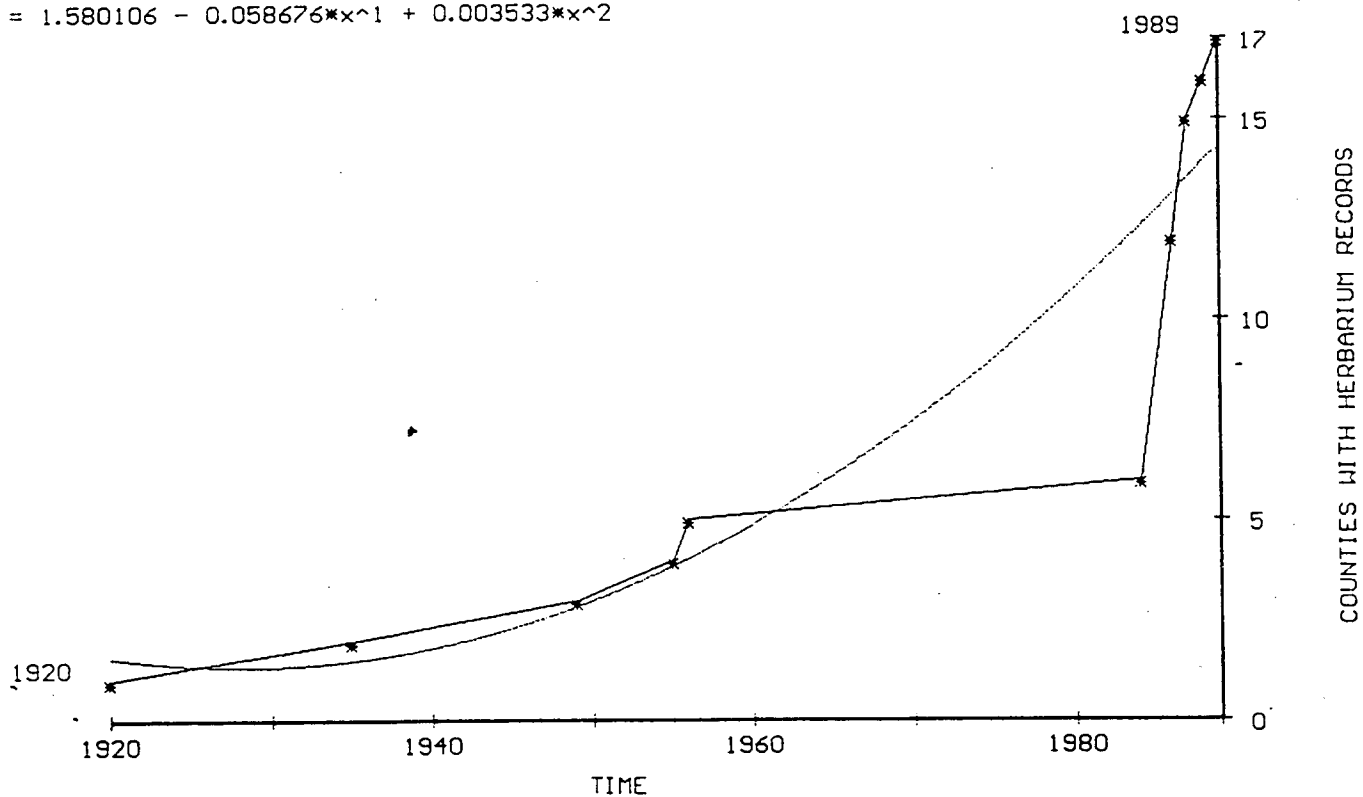


Counties reporting the exotic *Centaurea pratensis* (meadow knapweed), 1875-1992.

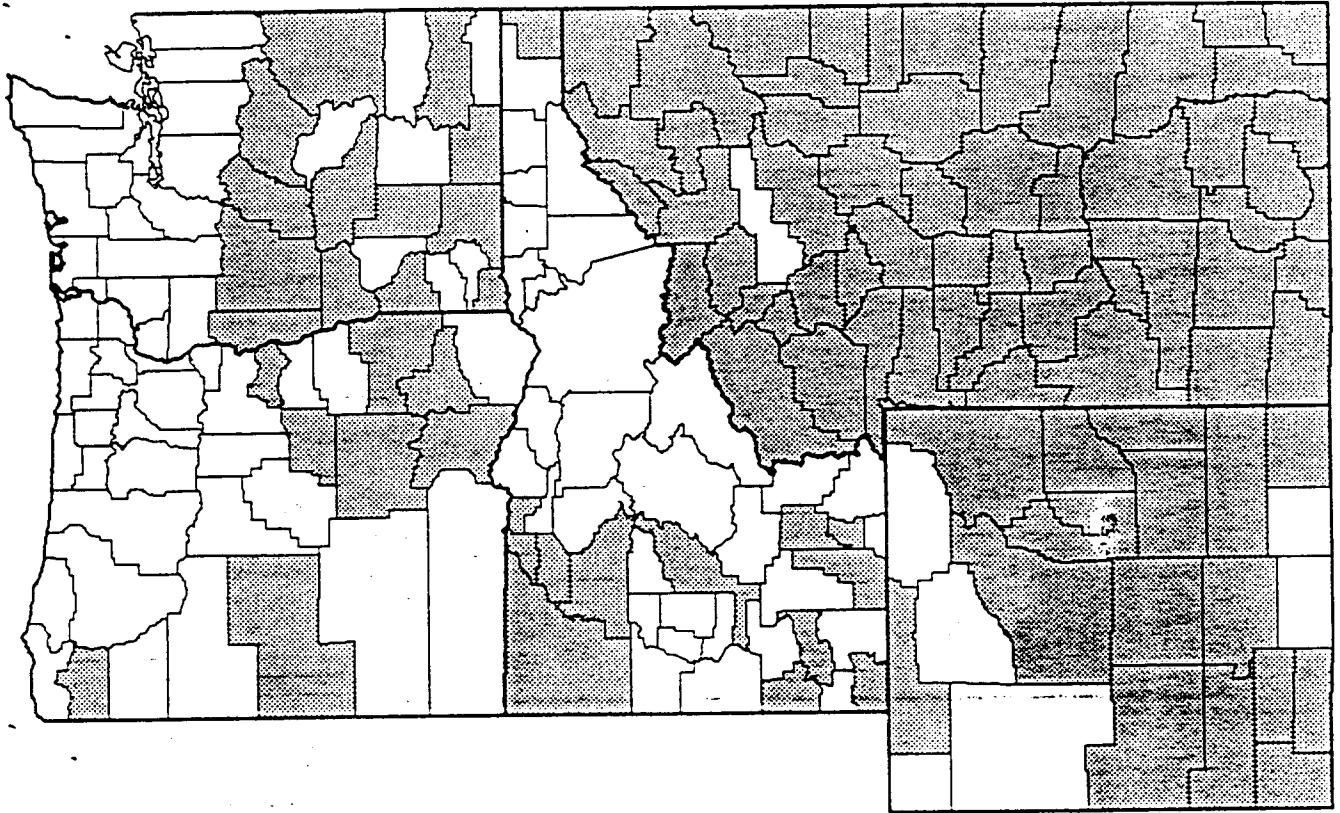


Centaurea pratensis INCREASE IN NORTHWEST STATES

$$y = 1.580106 - 0.058676 * x^1 + 0.003533 * x^2$$

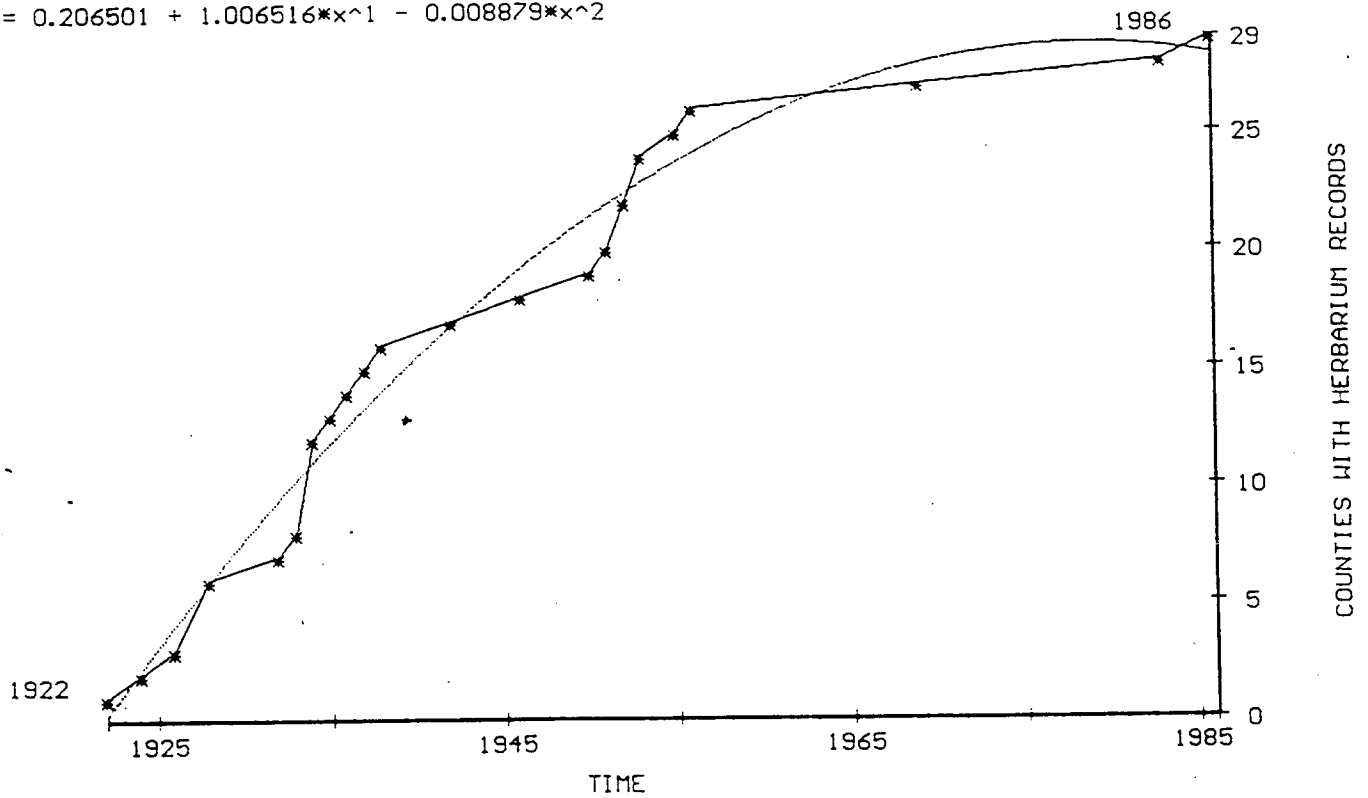


Counties reporting the exotic *Centaurea repens* (Russian knapweed), 1875-1993.

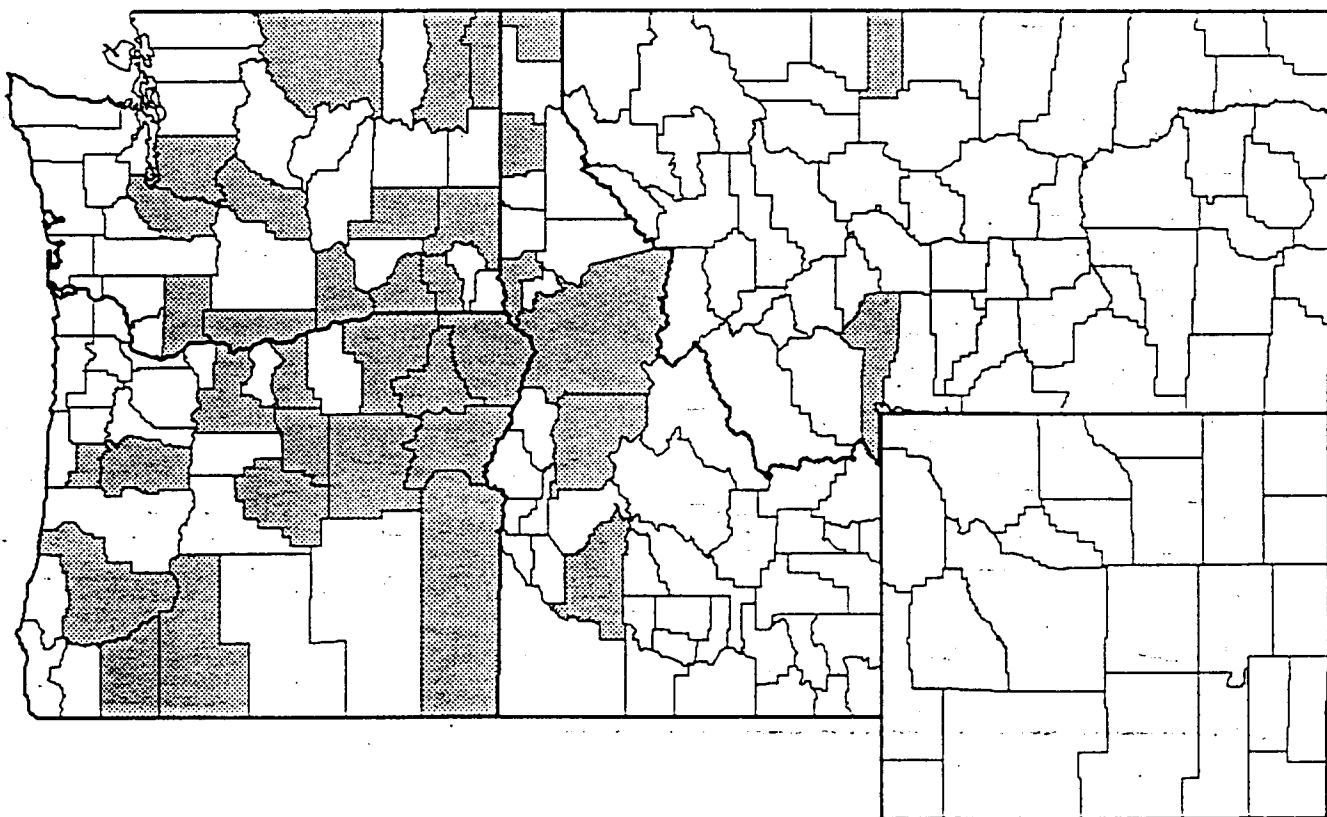


Centaurea repens INCREASE IN NORTHWEST STATES

$$y = 0.206501 + 1.006516 * x^1 - 0.008879 * x^2$$

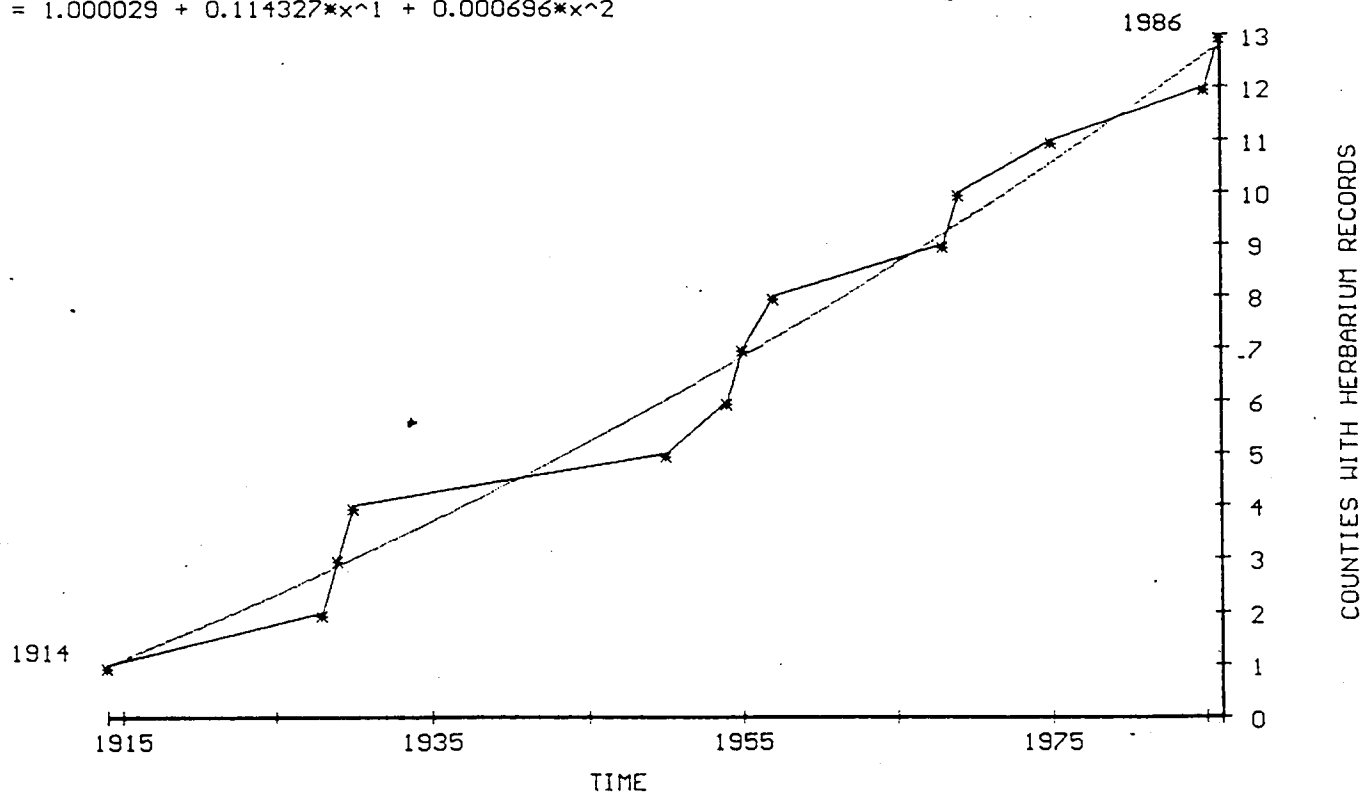


Counties reporting the exotic *Centaurea solstitialis* (yellow starthistle), 1875-1994.

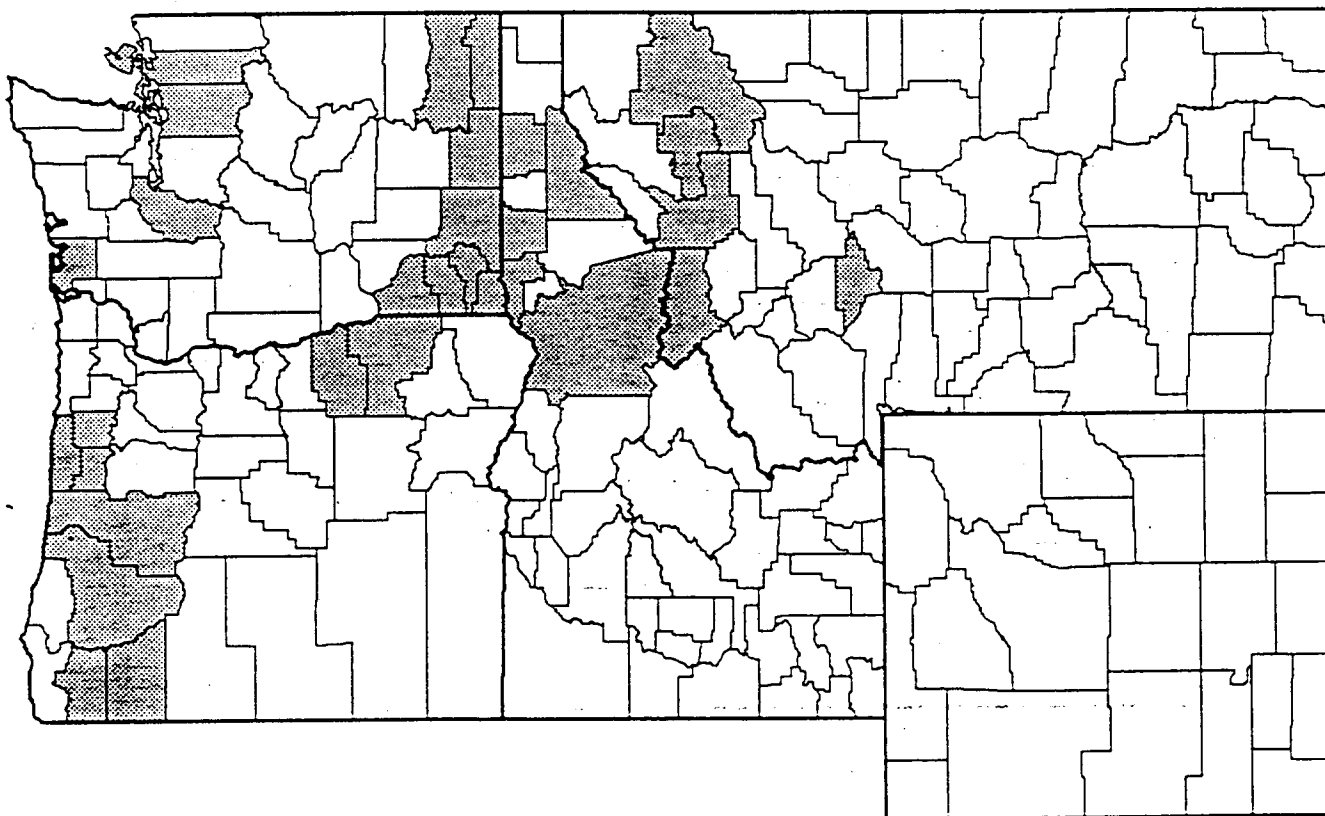


Centaurea solstitialis INCREASE IN NORTHWEST STATES

$$y = 1.000029 + 0.114327 * x^1 + 0.000696 * x^2$$

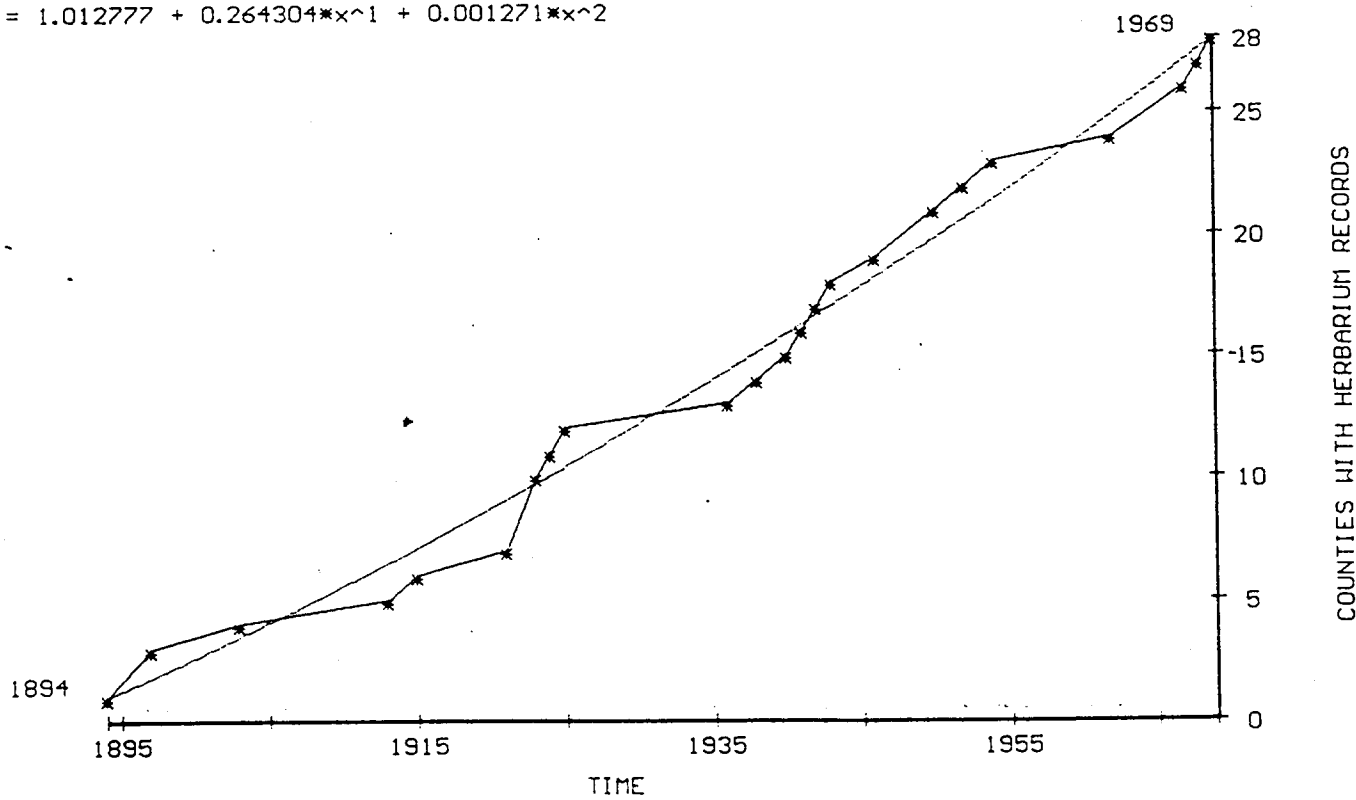


Counties reporting the exotic *Cerastium viscosum* (sticky chickweed), 1875-1993.

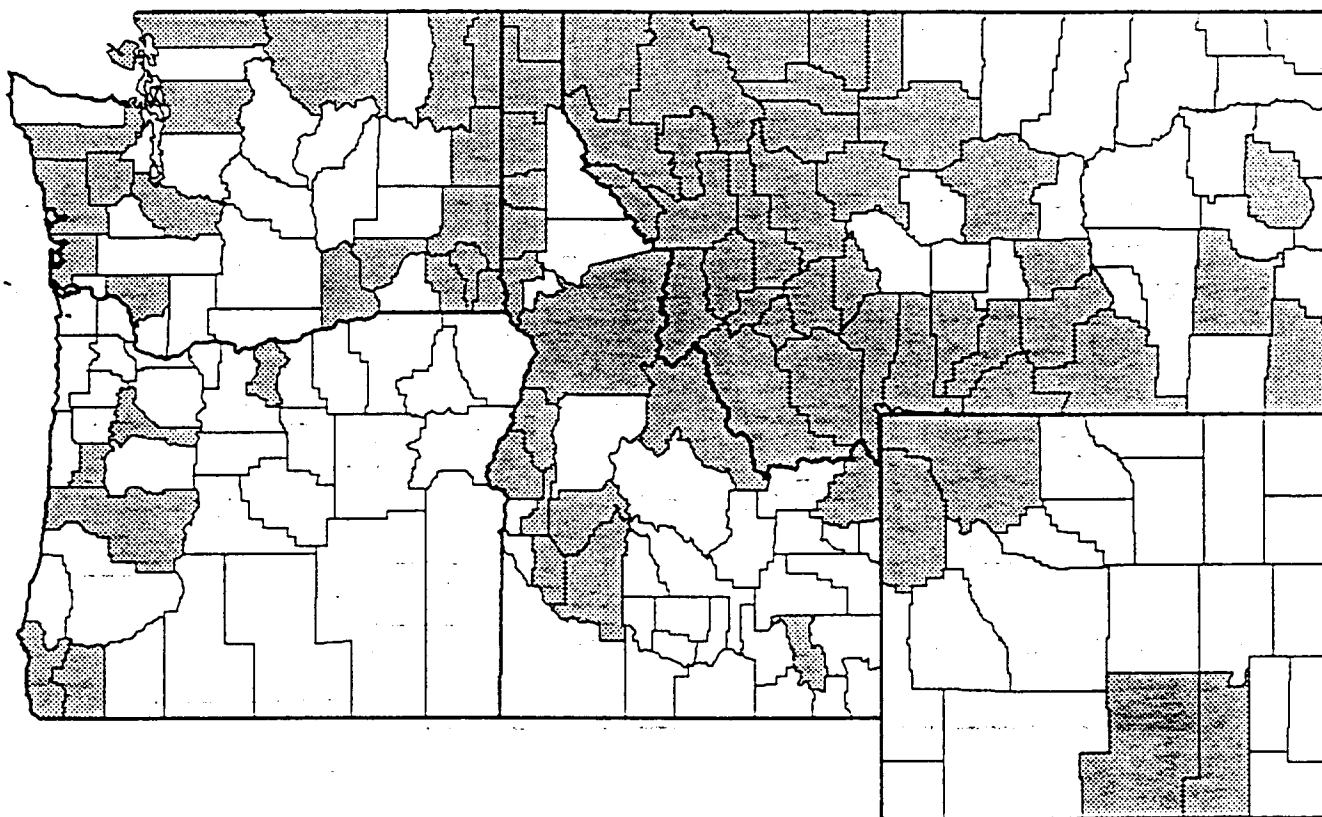


Cerastium viscosum INCREASE IN NORTHWEST STATES

$$y = 1.012777 + 0.264304 * x^1 + 0.001271 * x^2$$

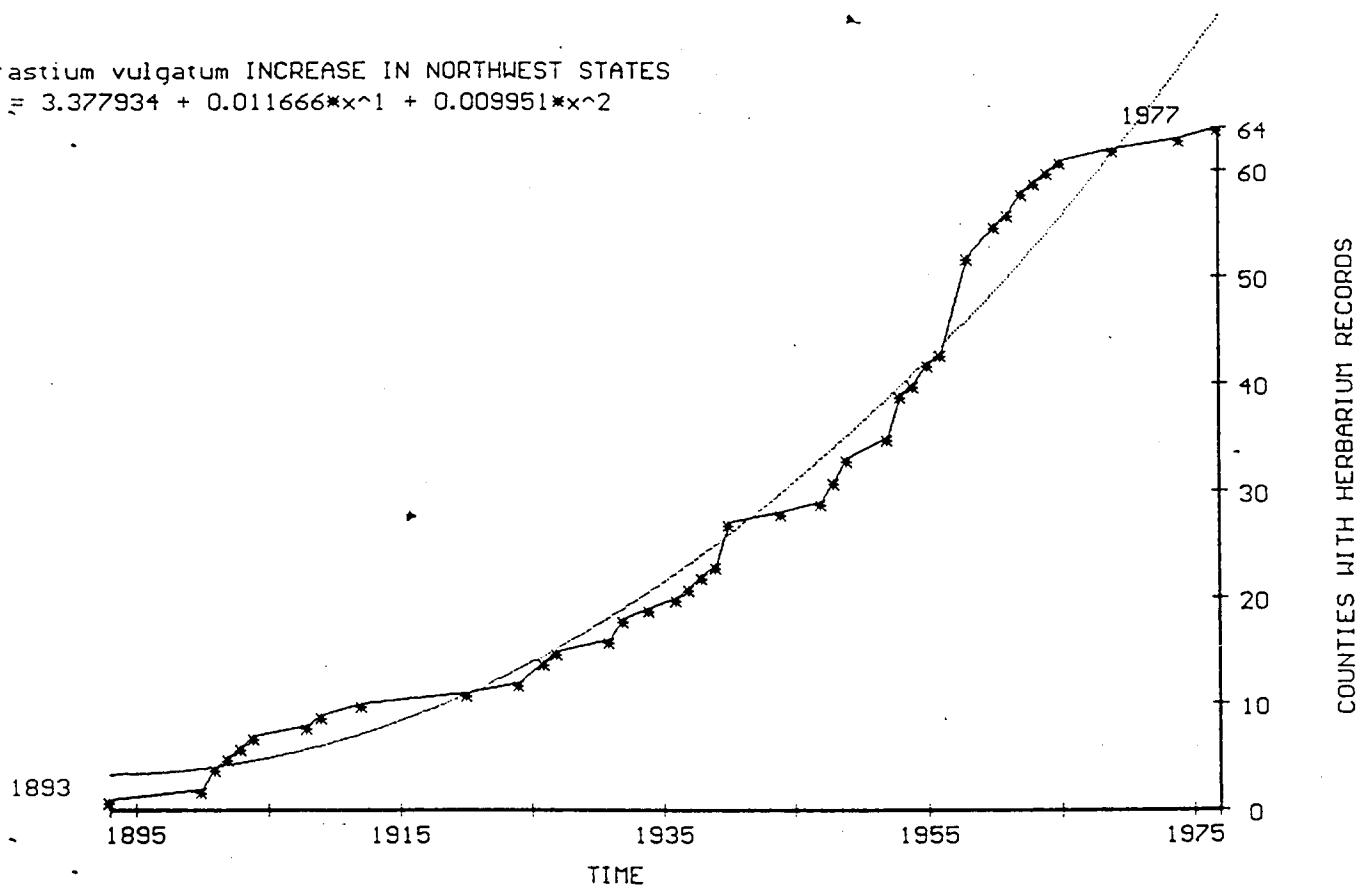


Counties reporting the exotic *Cerastium vulgatum* (mouseear chickweed), 1875-1994.

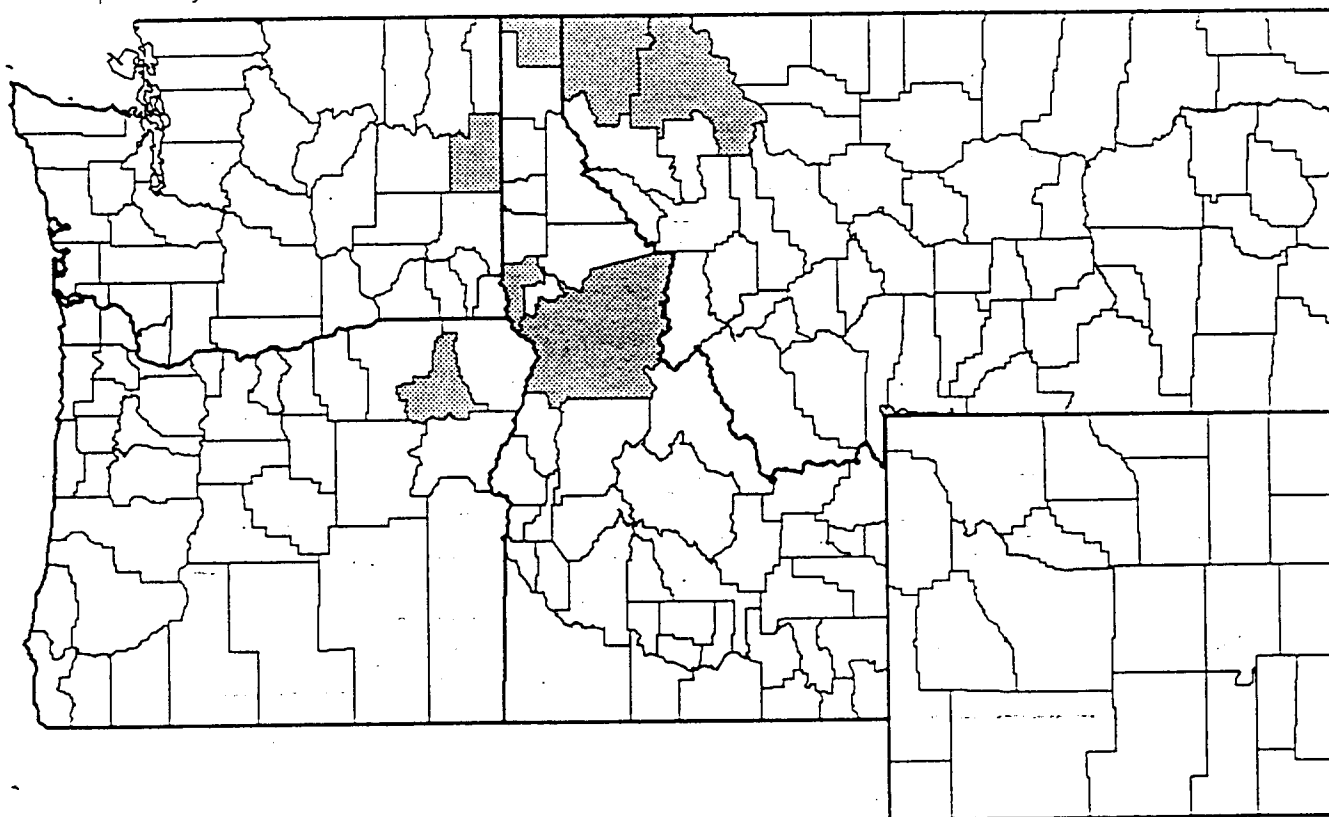


Cerastium vulgatum INCREASE IN NORTHWEST STATES

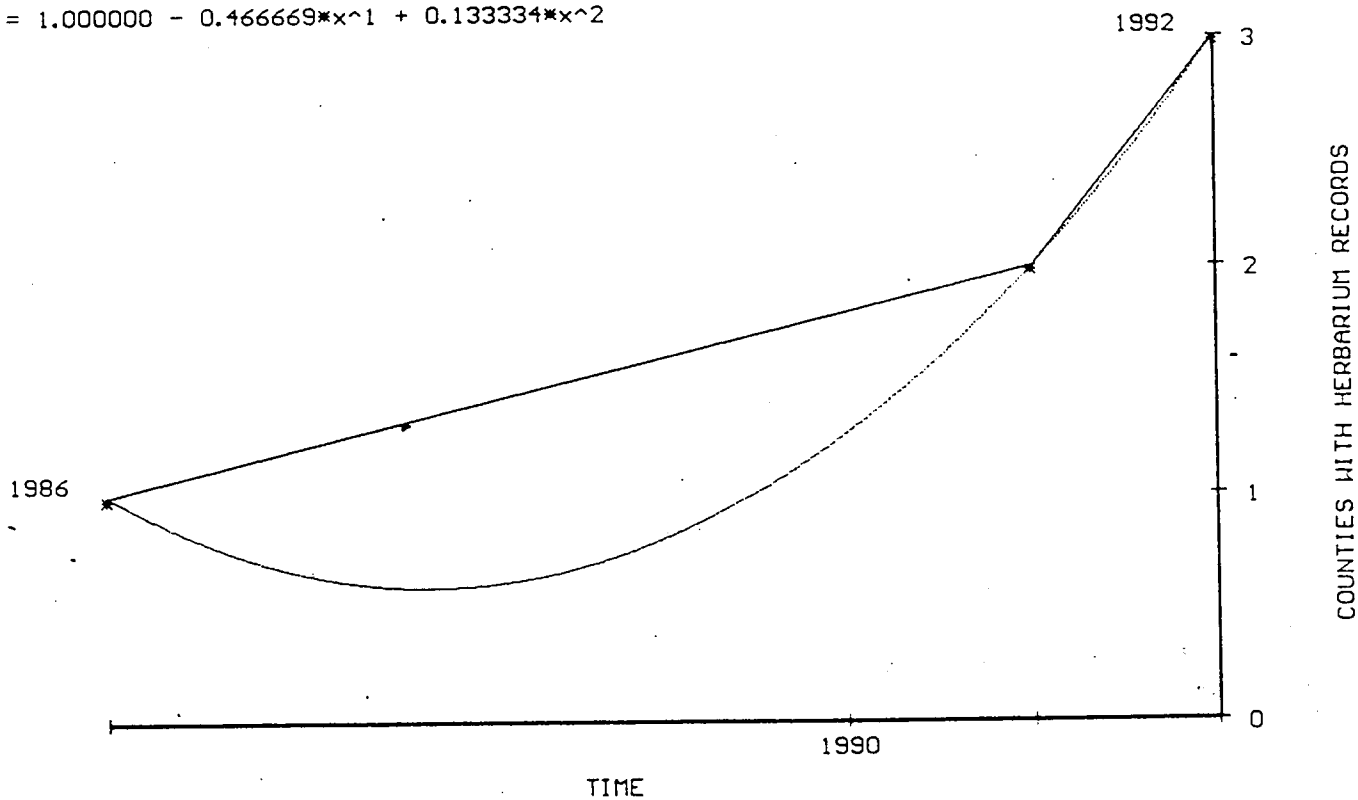
$$y = 3.377934 + 0.011666 \times x^1 + 0.009951 \times x^2$$



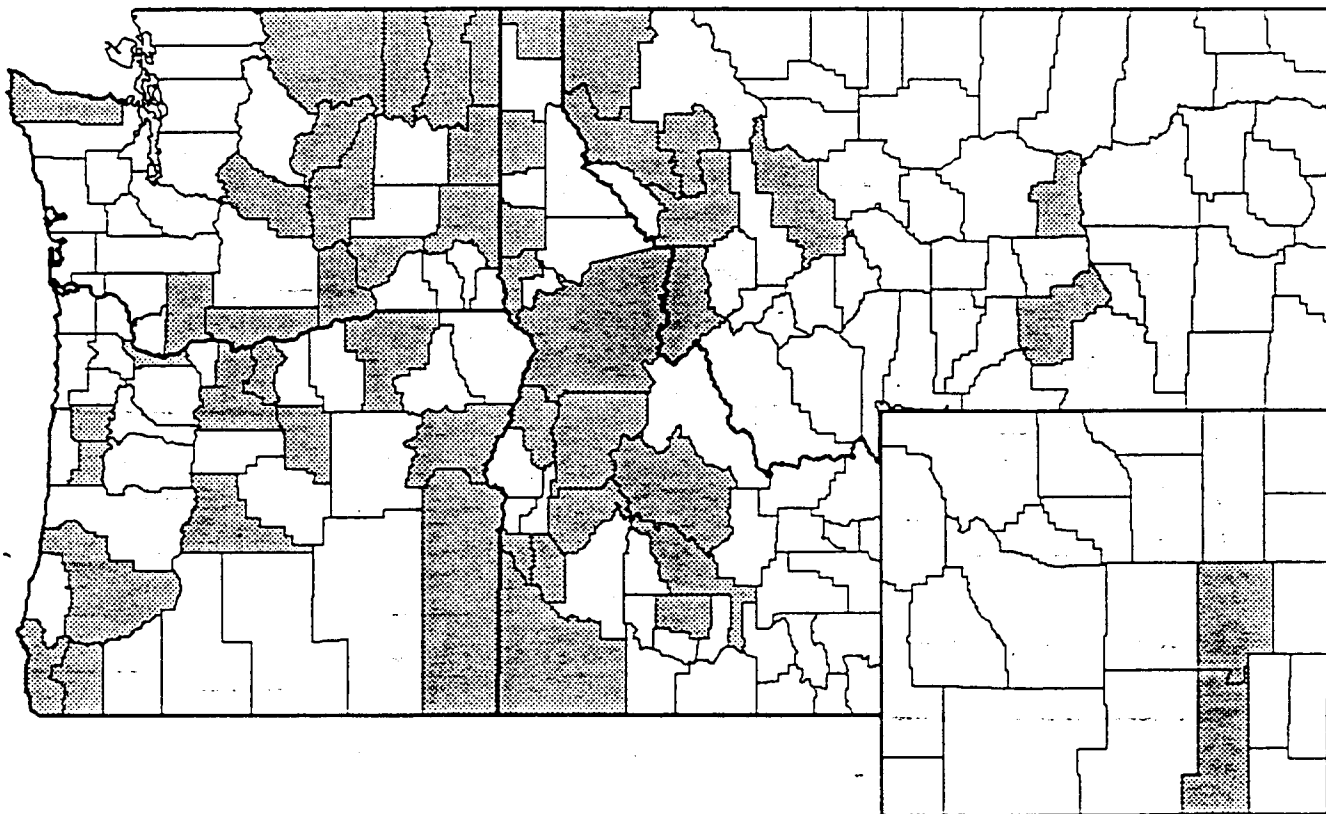
Counties reporting the exotic *Chaenorrhinum minus* (dwarf snapdragon), 1875-1992.



Chaenorrhinum minus INCREASE IN NORTHWEST STATES
 $y = 1.000000 - 0.466669 * x^1 + 0.133334 * x^2$

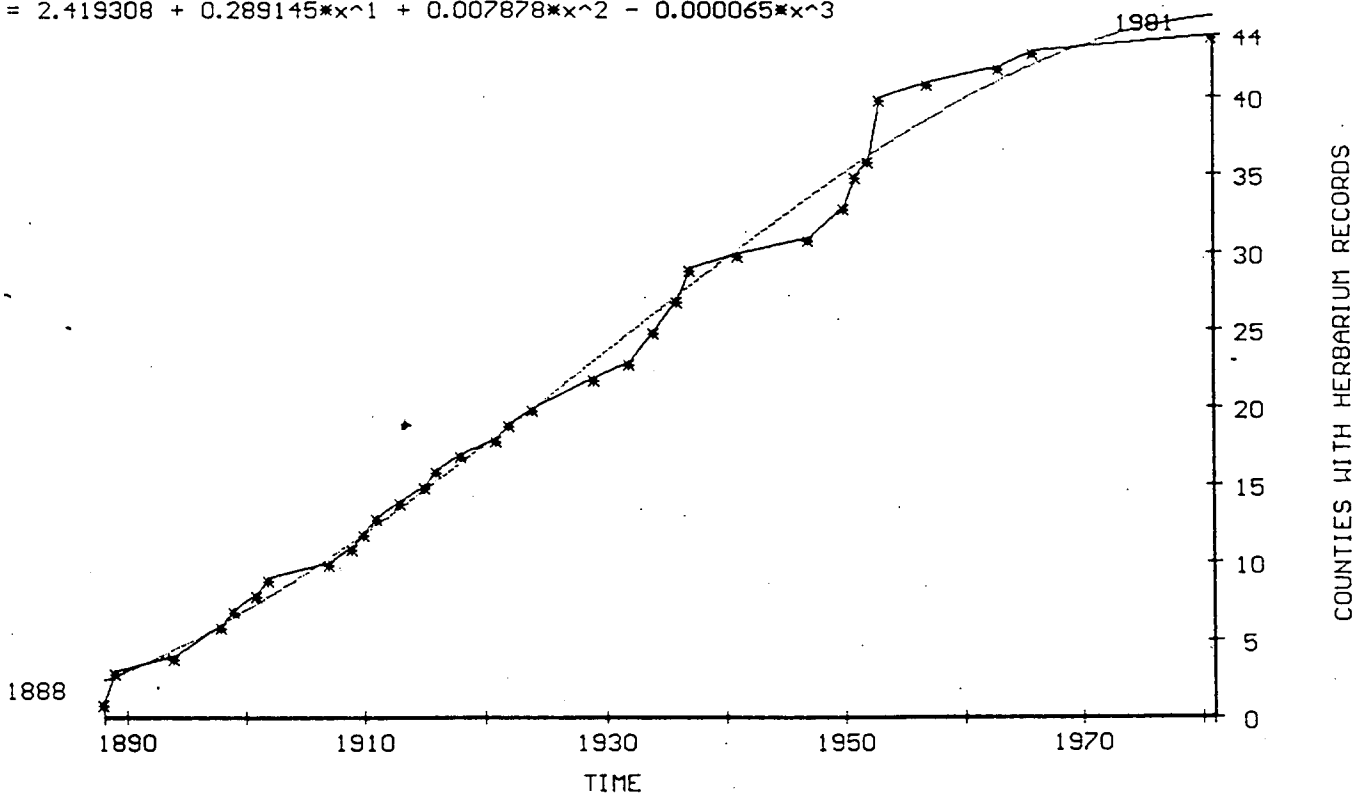


Counties reporting the exotic *Chenopodium botrys* (Jerusalem oak goosefoot), 1875-1992.

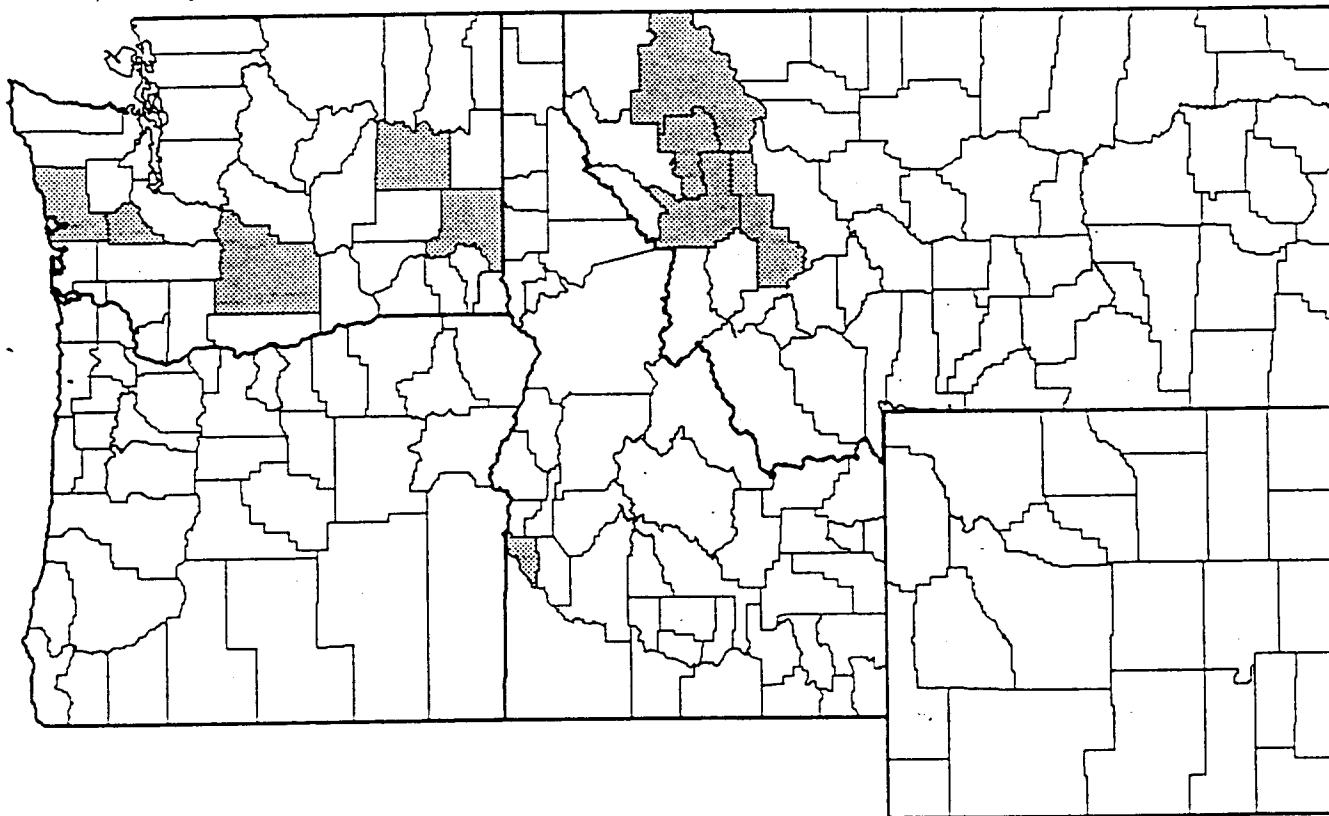


Chenopodium botrys INCREASE IN NORTHWEST STATES

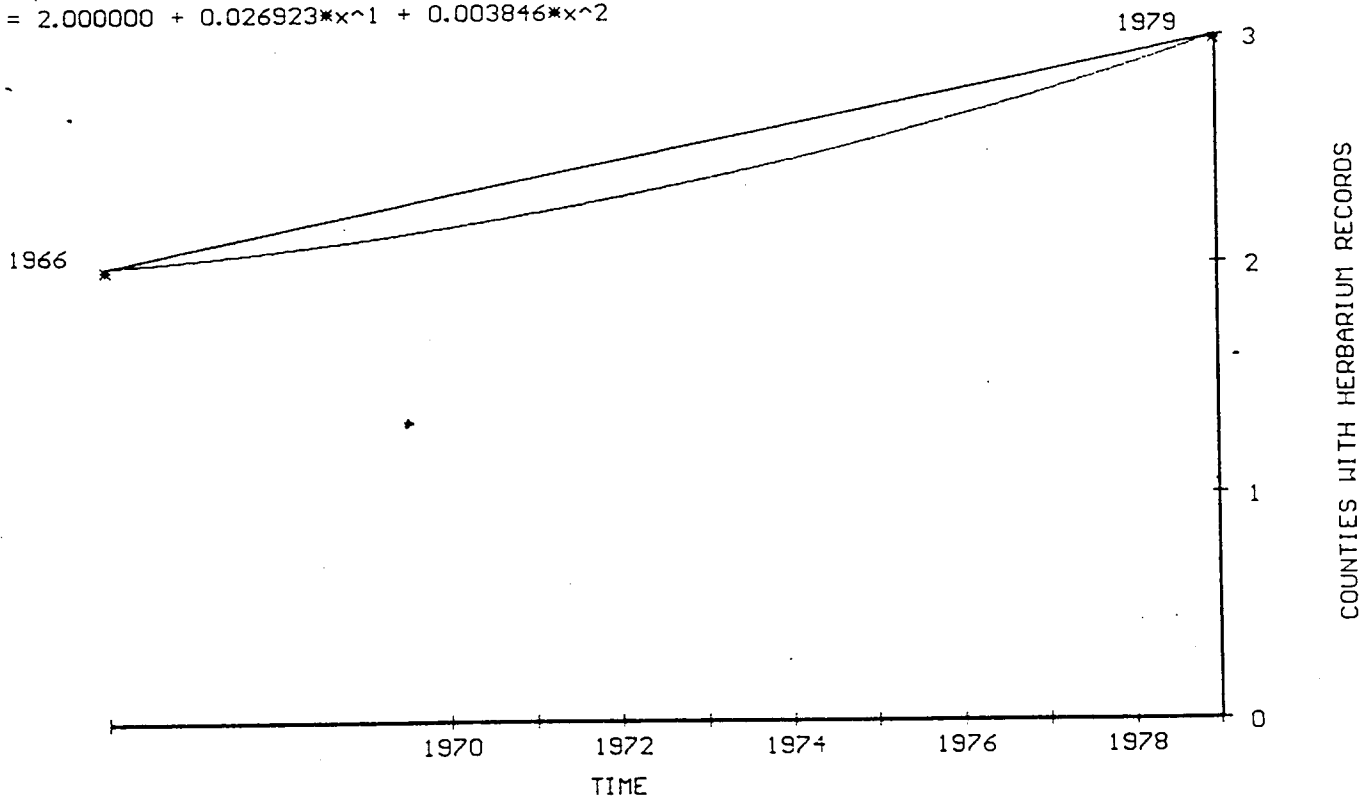
$$y = 2.419308 + 0.289145 \cdot x^1 + 0.007878 \cdot x^2 - 0.000065 \cdot x^3$$



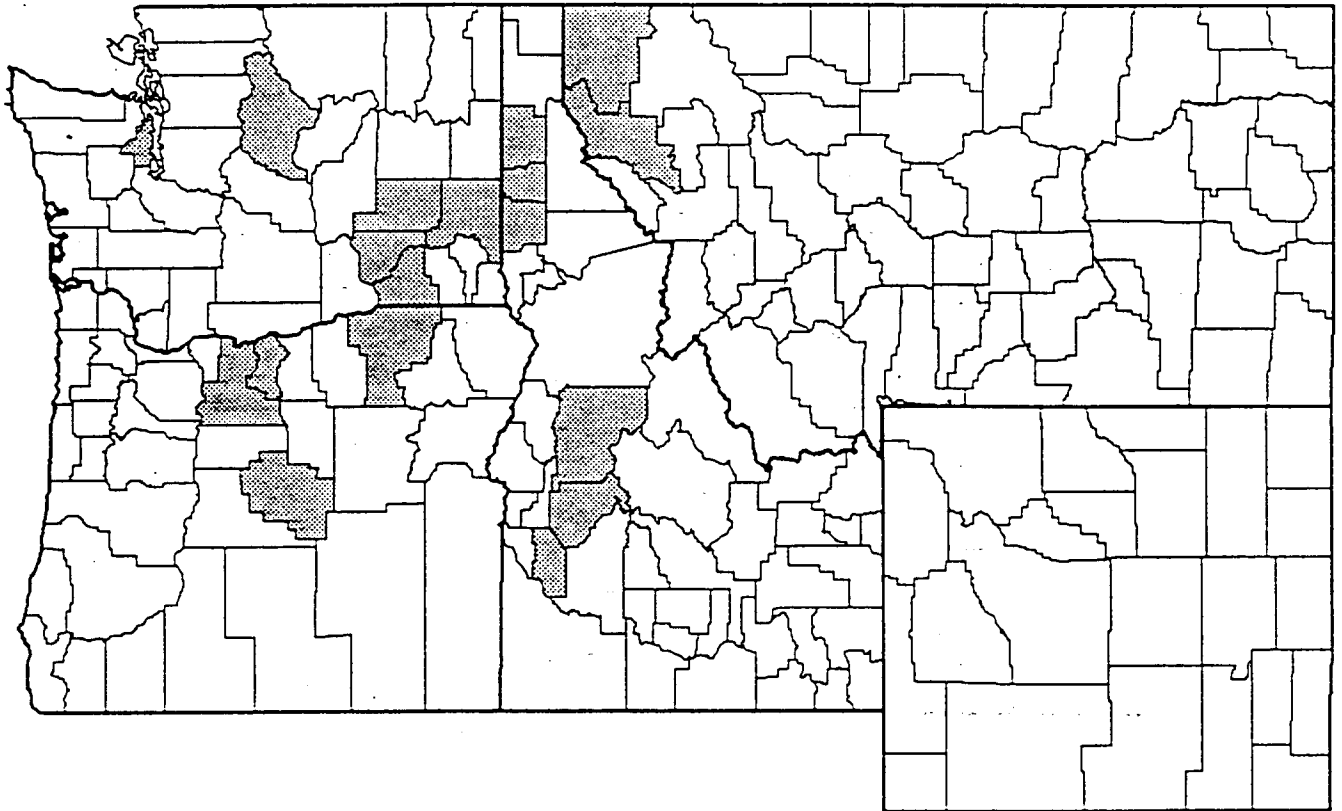
Counties reporting the exotic *Chenopodium murale* (nettleleaf goosefoot), 1875-1991.



Chenopodium murale INCREASE IN NORTHWEST STATES
 $y = 2.000000 + 0.026923 * x^1 + 0.003846 * x^2$

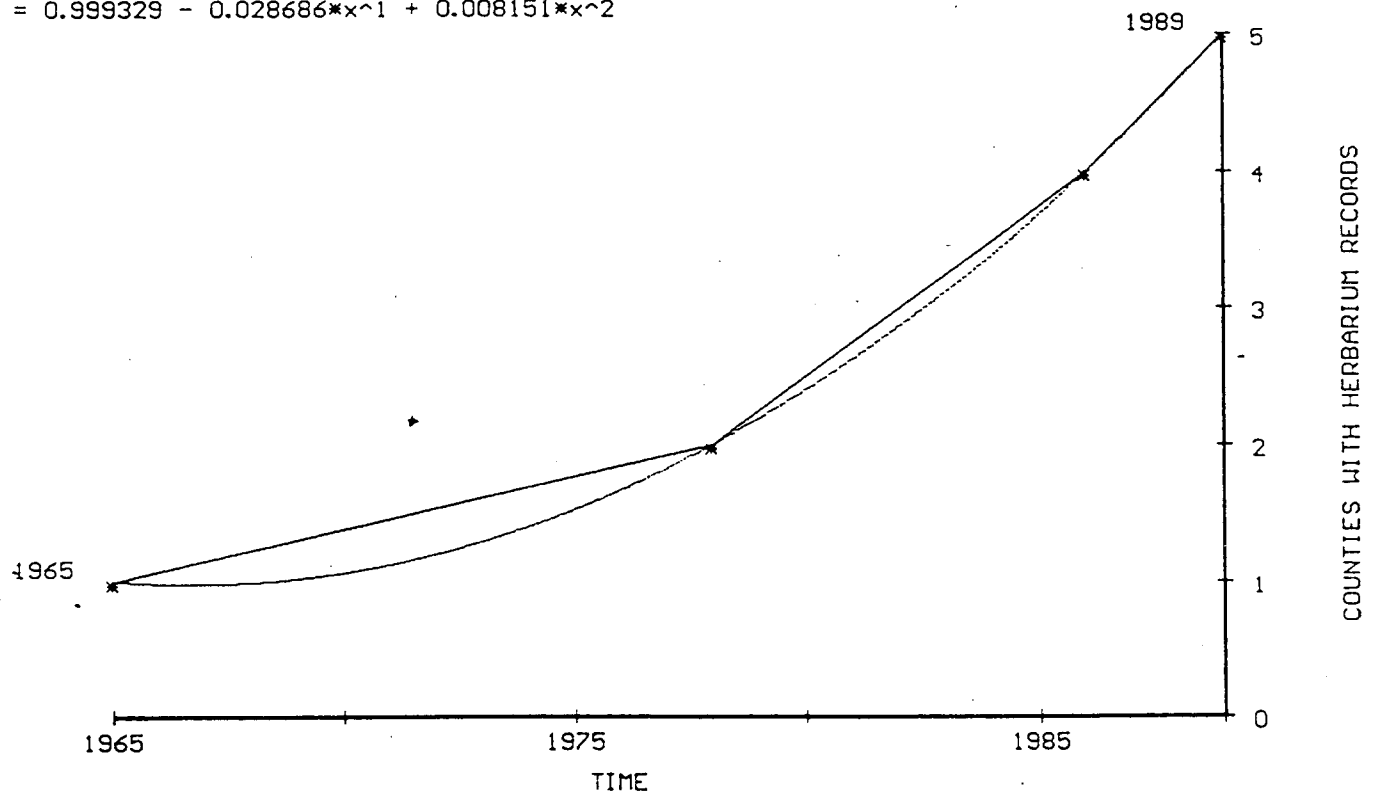


Counties reporting the exotic *Chondrilla juncea* (rush skeletonweed), 1875-1993.

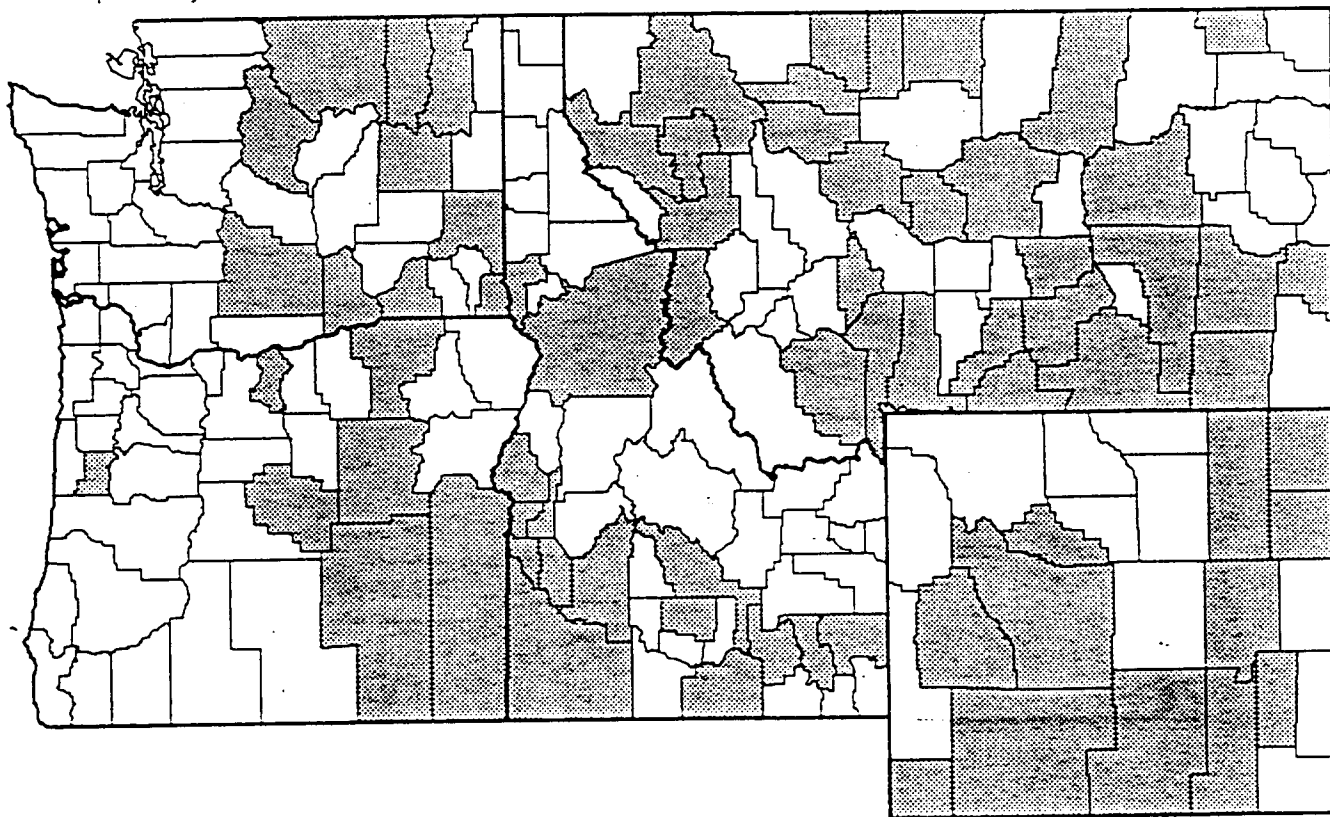


Chondrilla juncea INCREASE IN NORTHWEST STATES

$$y = 0.999329 - 0.028686x^1 + 0.008151x^2$$

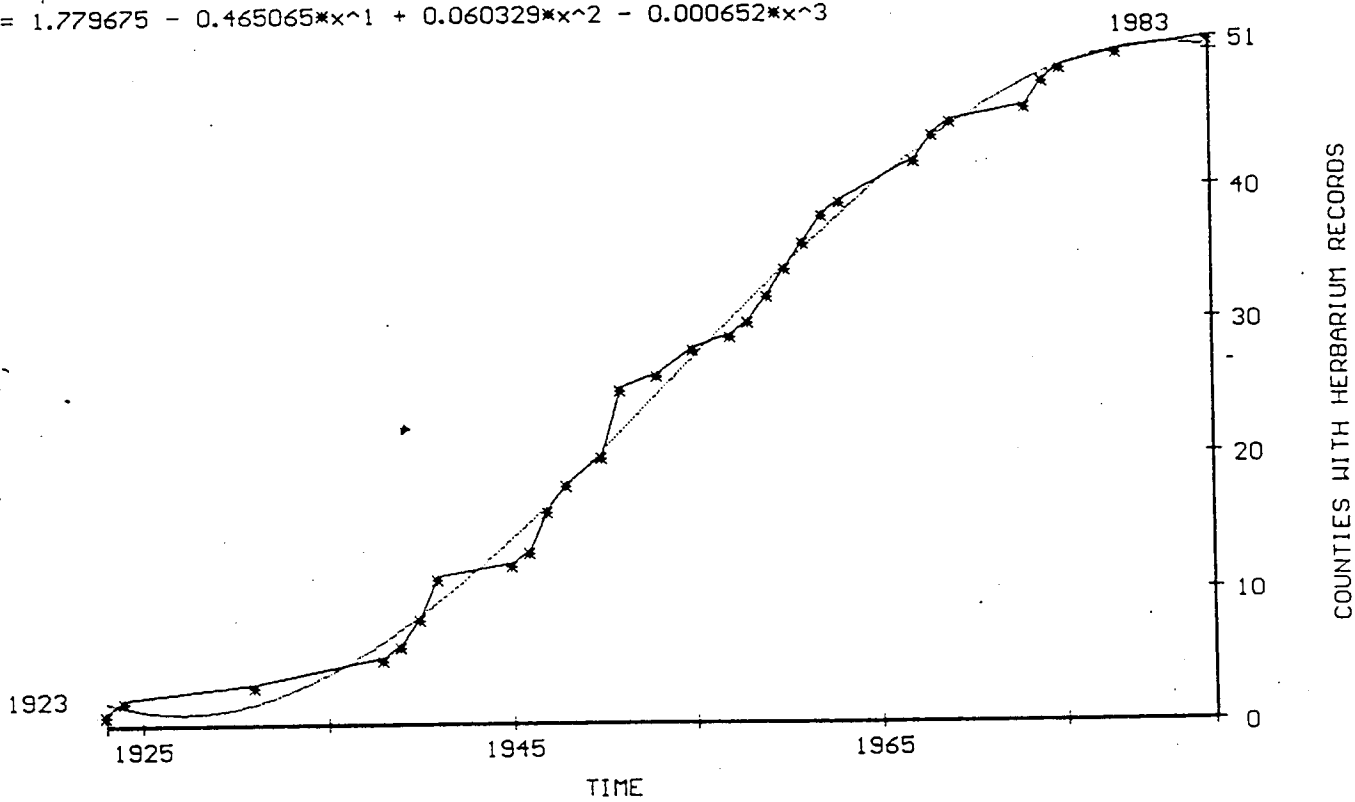


Counties reporting the exotic *Chorispora tenella* (blue mustard), 1875-1993.

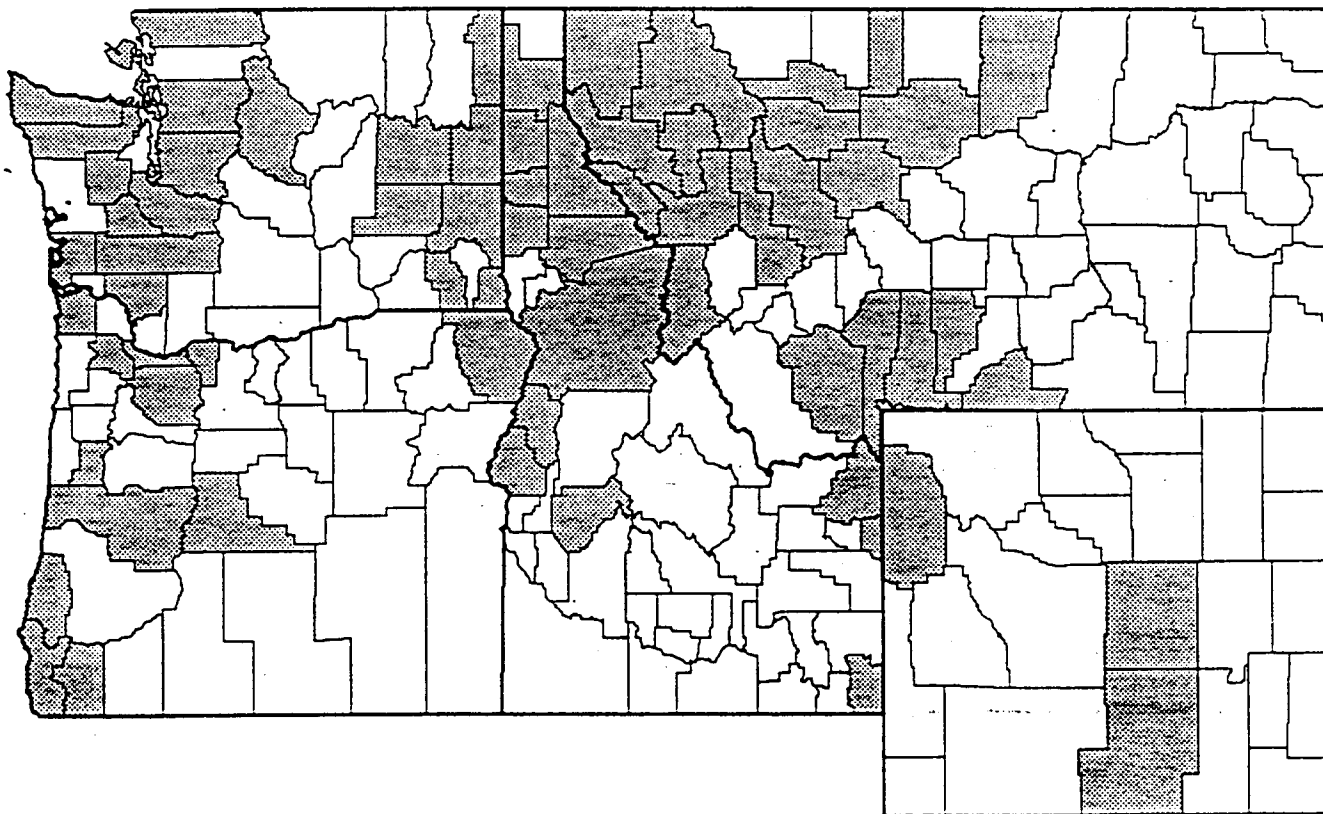


Chorispora tenella INCREASE IN NORTHWEST STATES

$$y = 1.779675 - 0.465065 * x^1 + 0.060329 * x^2 - 0.000652 * x^3$$

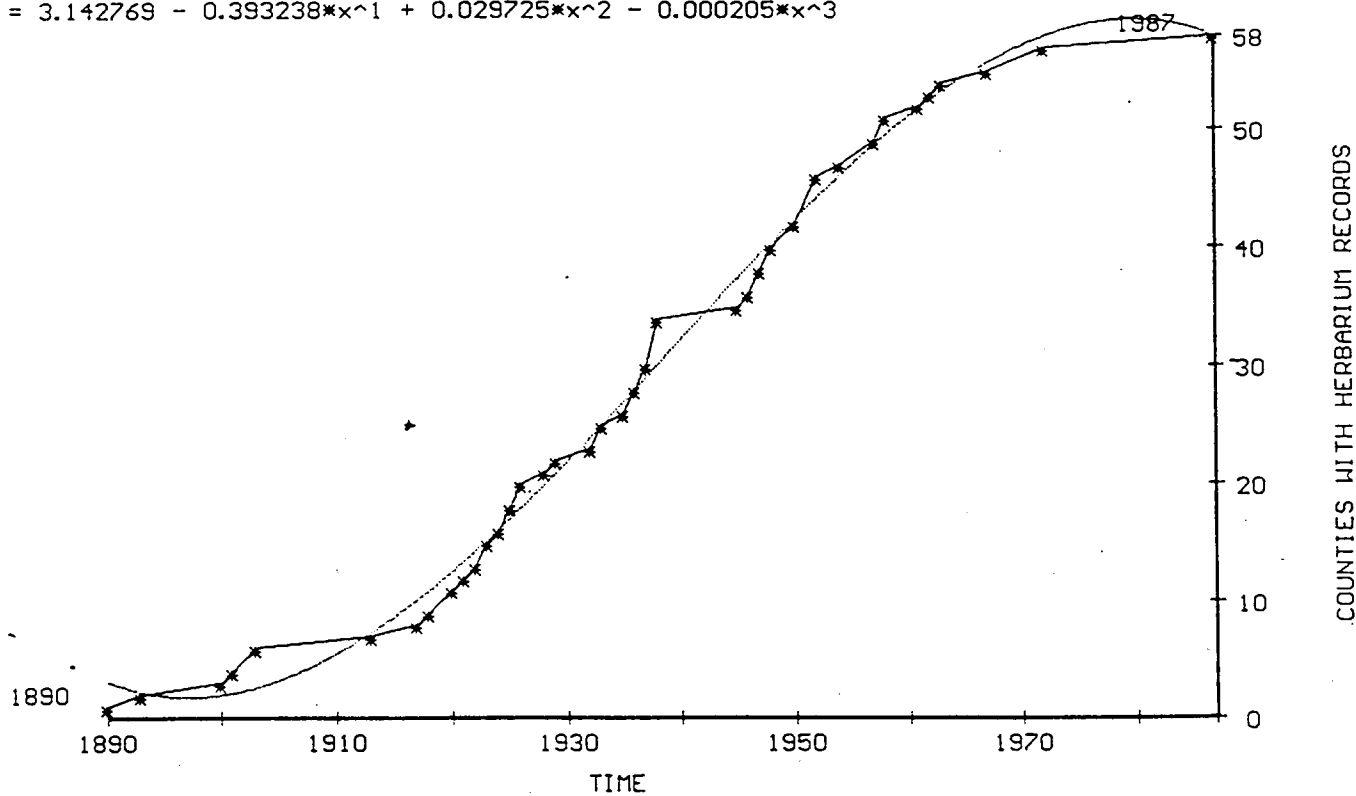


Counties reporting the exotic *Chrysanthemum leucanthemum* (oxeye daisy), 1875-1992.

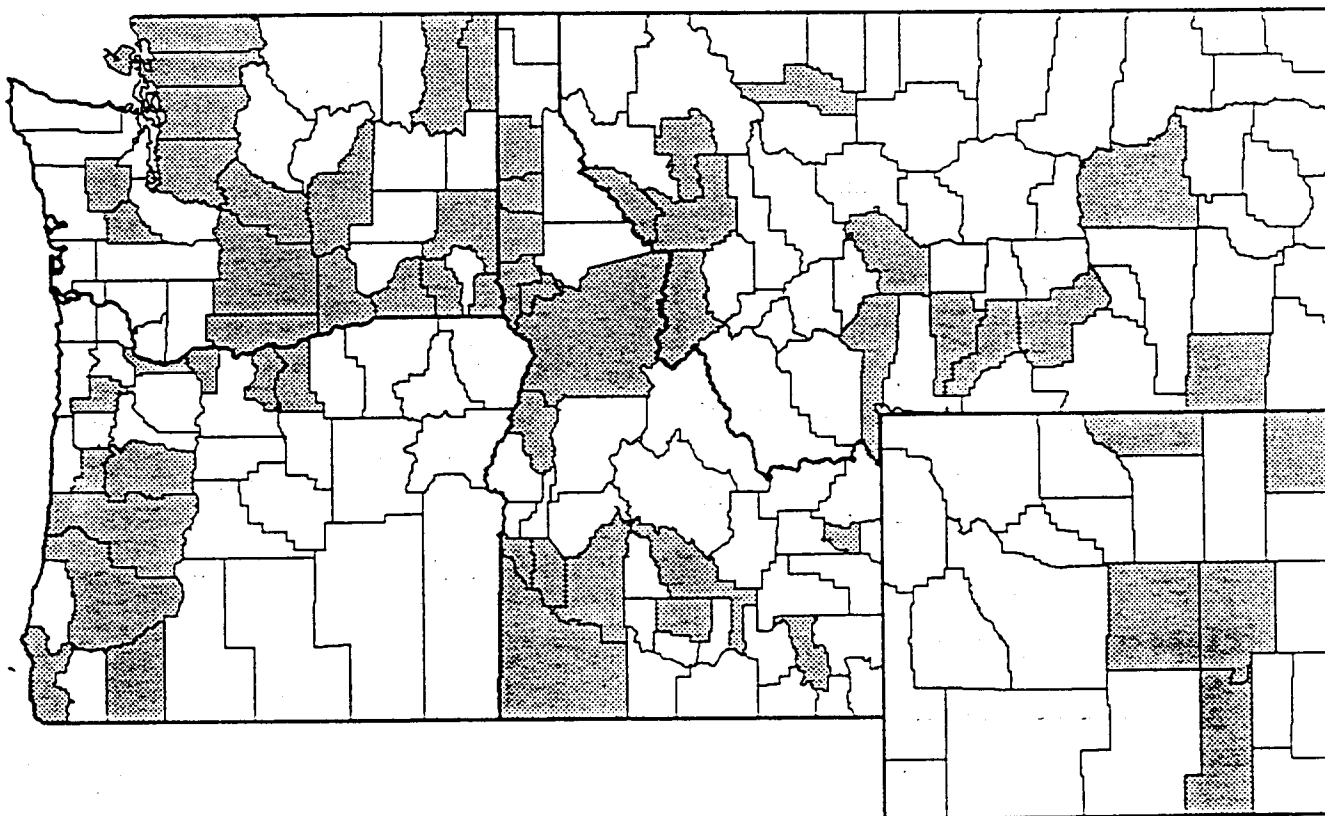


Chrysanthemum leucanthemum INCREASE IN NORTHWEST STATES

$$y = 3.142769 - 0.393238x^1 + 0.029725x^2 - 0.000205x^3$$

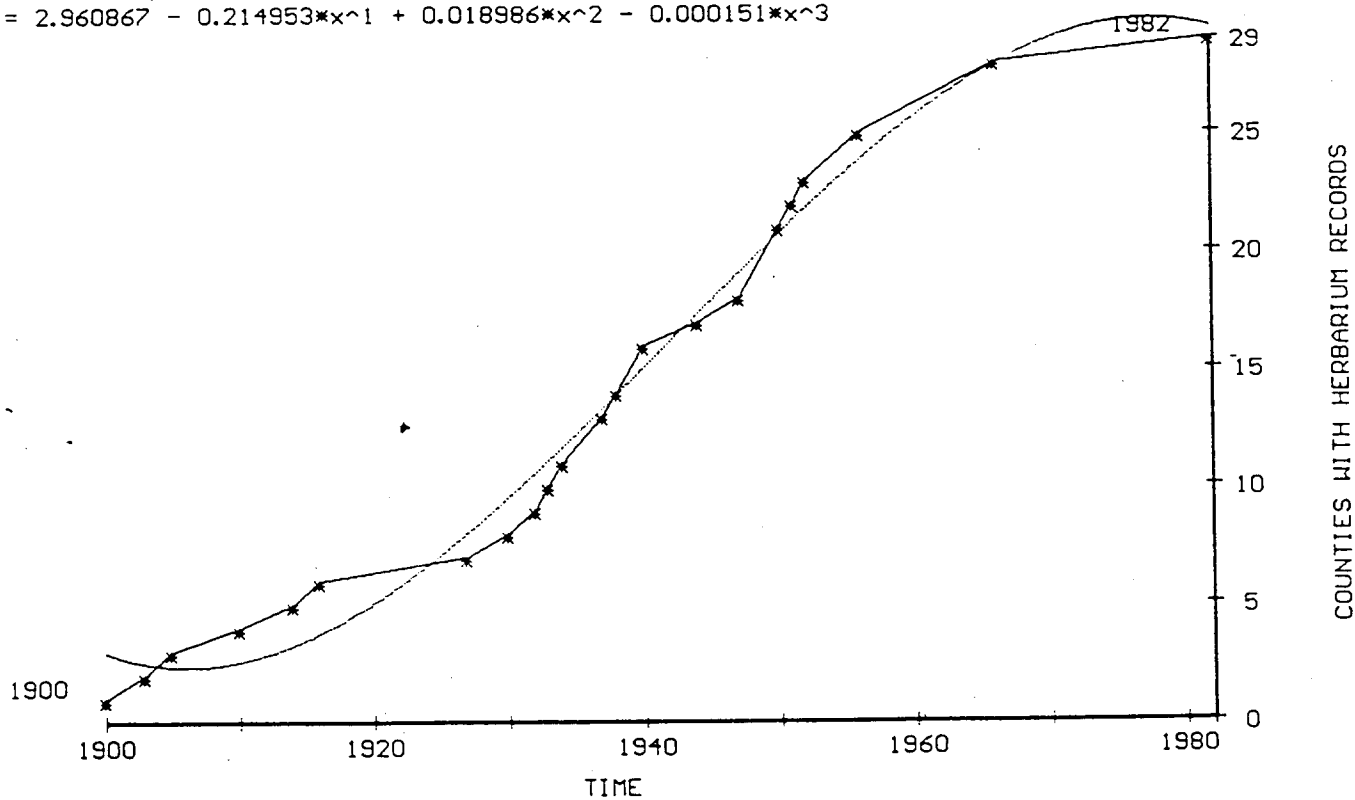


Counties reporting the exotic *Cichorium intybus* (chicory), 1875-1994.

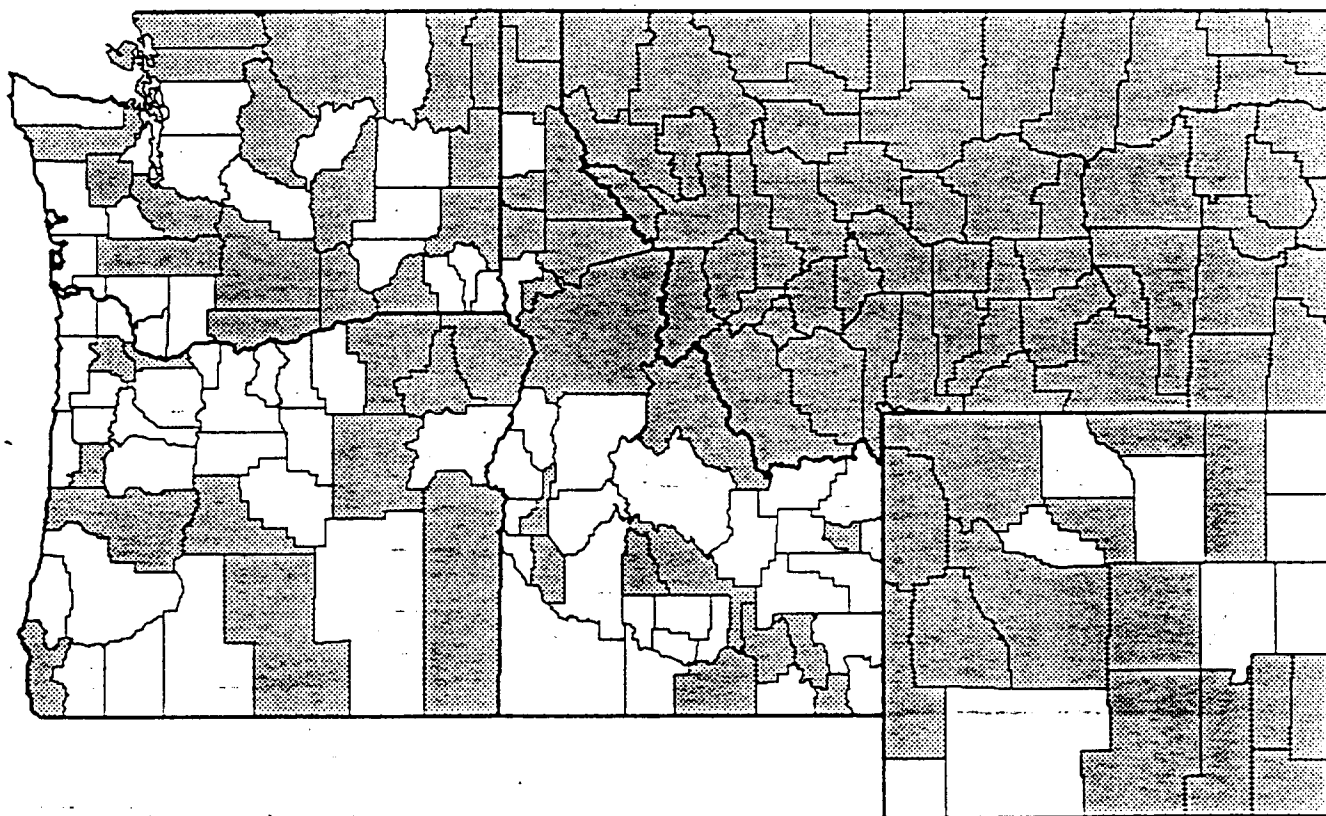


Cichorium intybus INCREASE IN NORTHWEST STATES

$$y = 2.960867 - 0.214953x^1 + 0.018986x^2 - 0.000151x^3$$

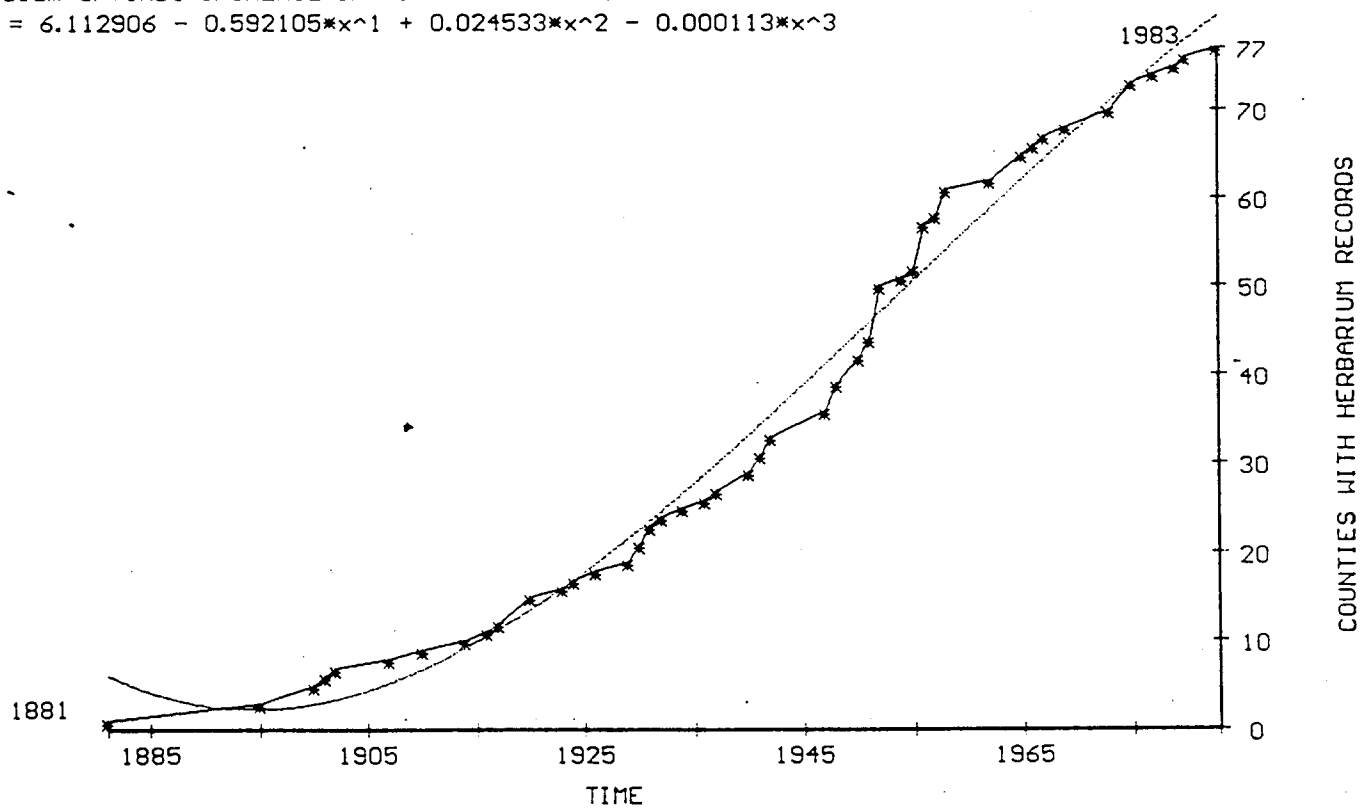


Counties reporting the exotic *Cirsium arvense* (Canada thistle), 1875-1994.

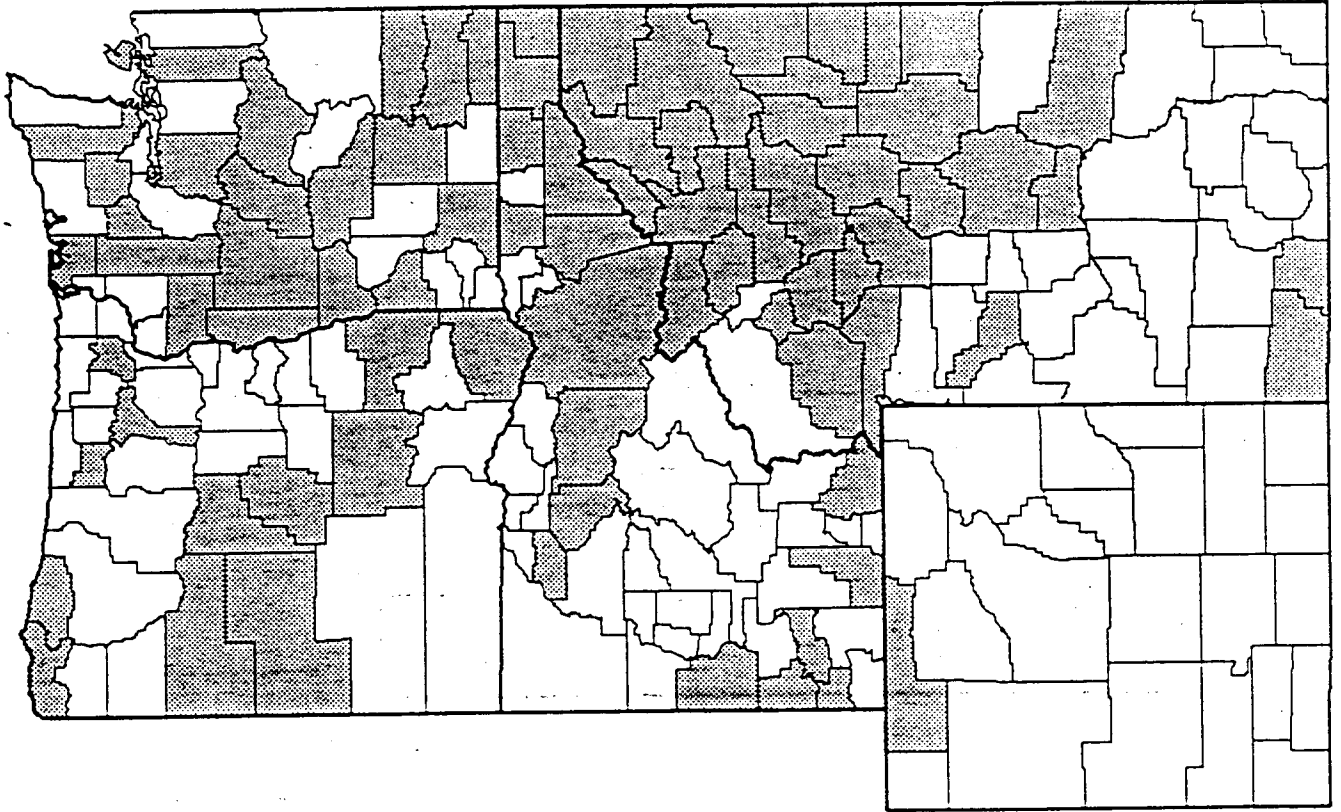


Cirsium arvense INCREASE IN NORTHWEST STATES

$$y = 6.112906 - 0.592105 * x^1 + 0.024533 * x^2 - 0.000113 * x^3$$

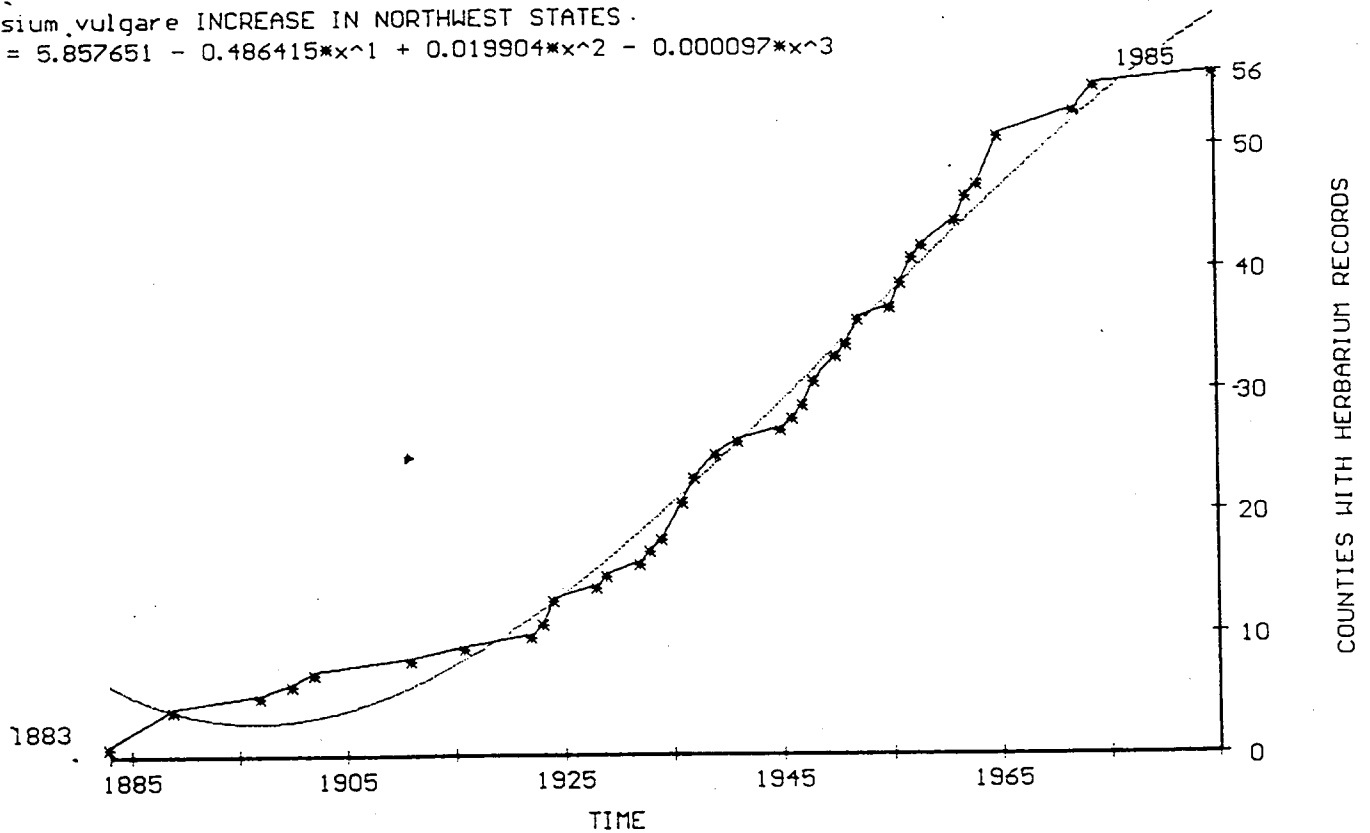


Counties reporting the exotic *Cirsium vulgare* (bull thistle), 1875-1994.

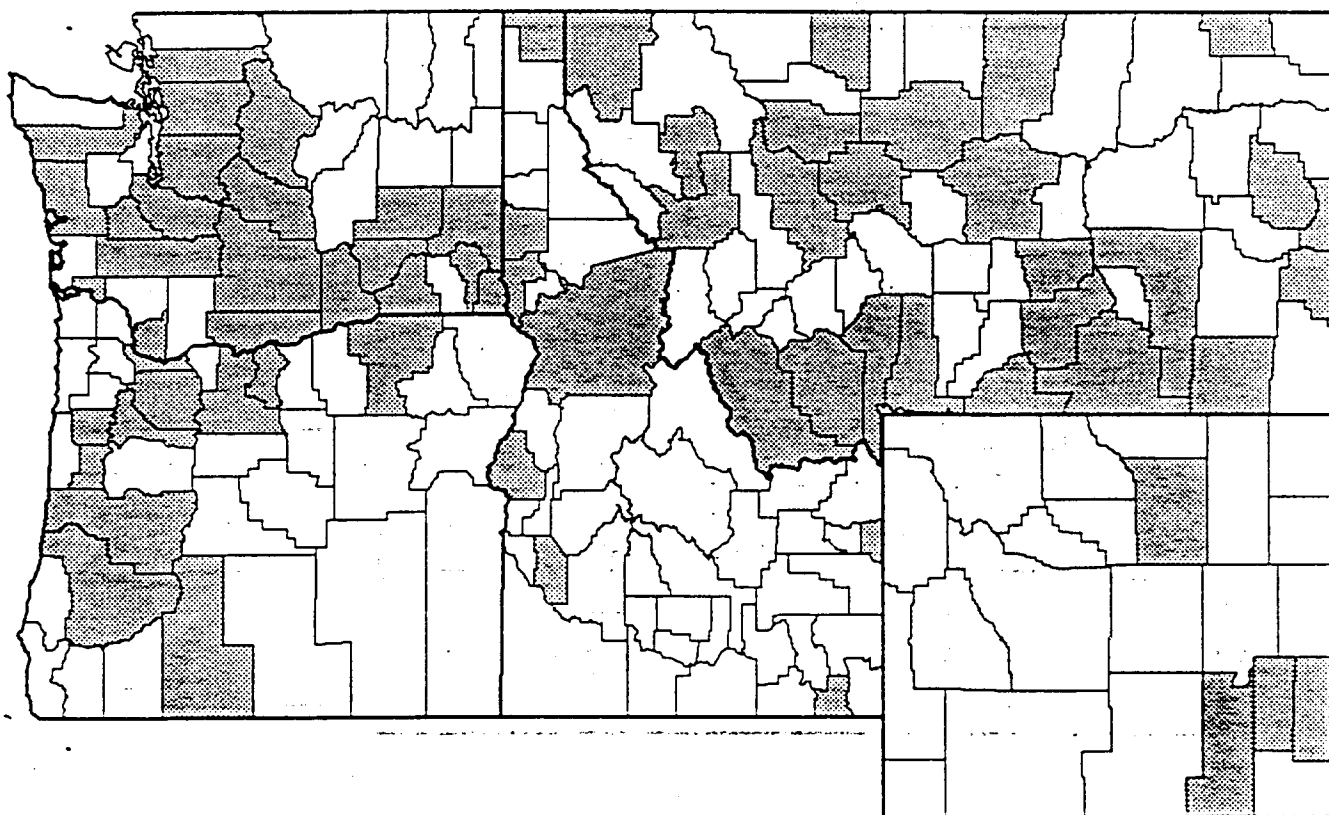


Cirsium vulgare INCREASE IN NORTHWEST STATES.

$$y = 5.857651 - 0.486415x^1 + 0.019904x^2 - 0.000097x^3$$

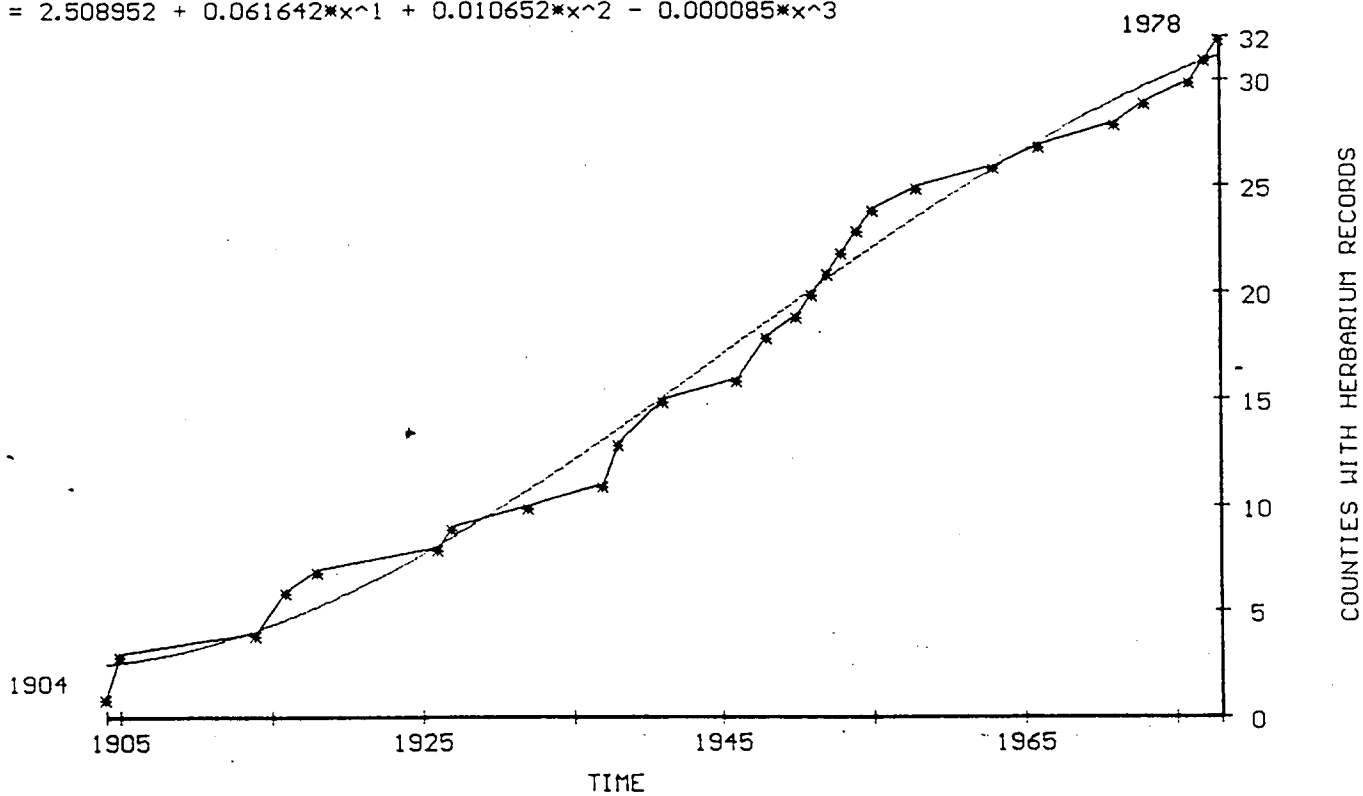


Counties reporting the exotic *Conium maculatum* (poison hemlock), 1875-1993.

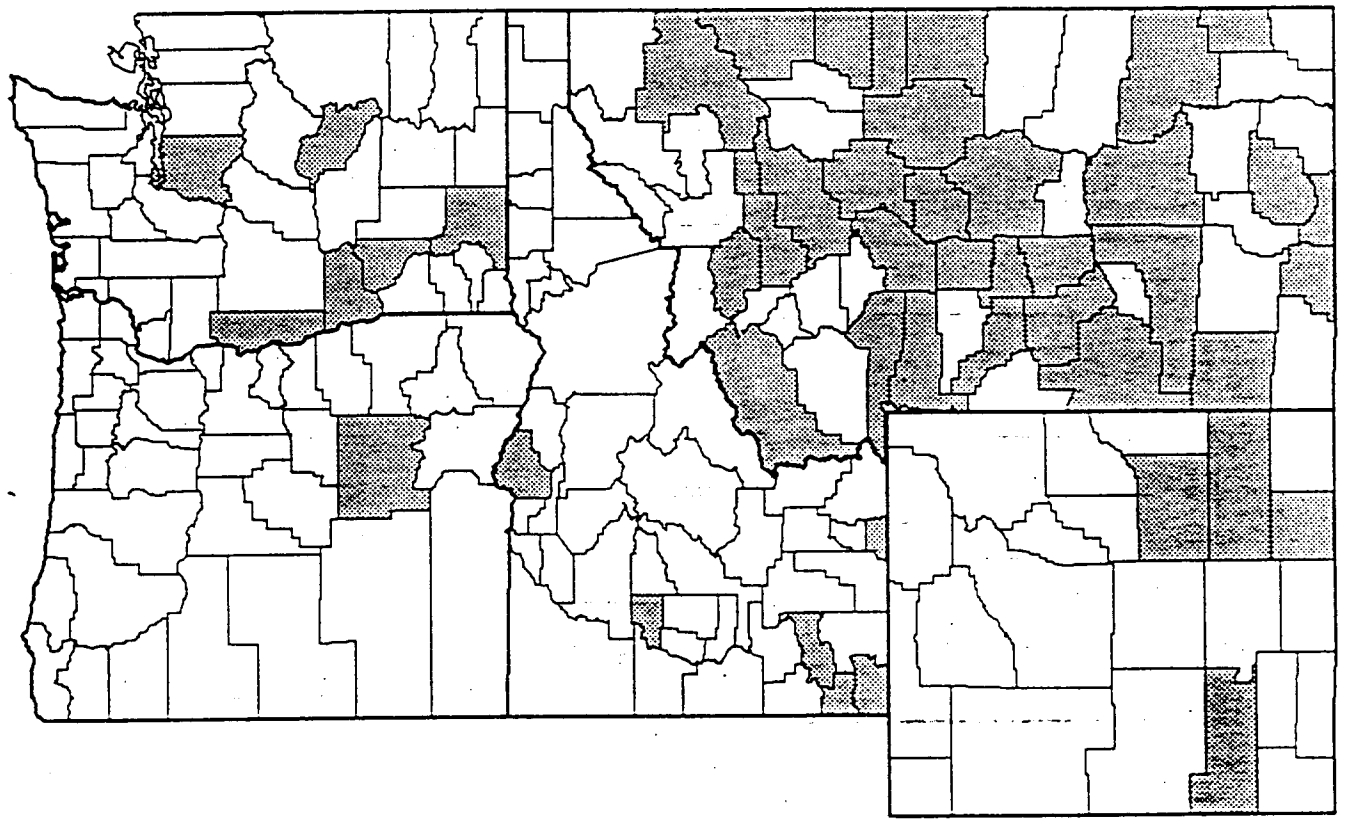


Conium maculatum INCREASE IN NORTHWEST STATES

$$\hat{y} = 2.508952 + 0.061642 \cdot x^1 + 0.010652 \cdot x^2 - 0.000085 \cdot x^3$$

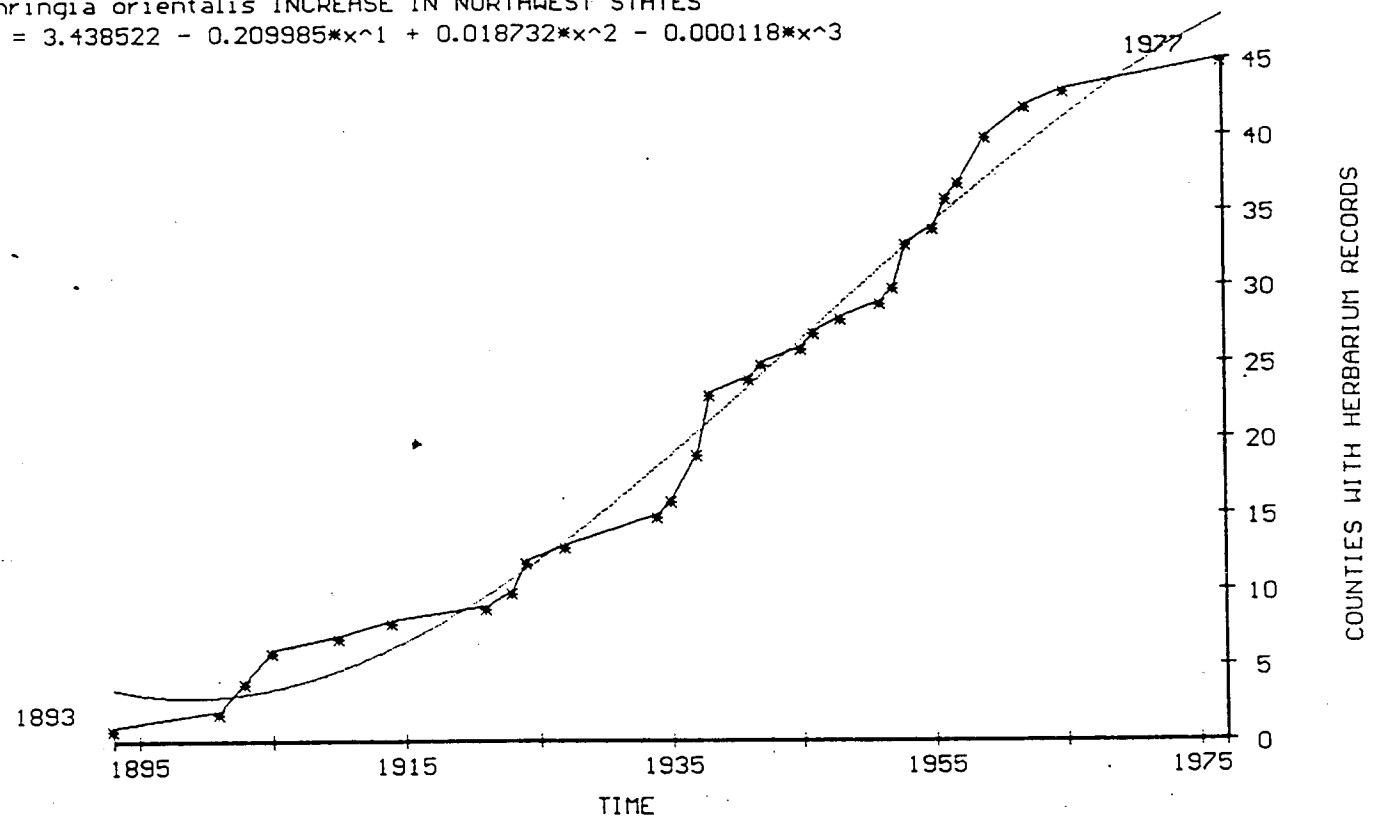


Counties reporting the exotic *Conringia orientalis* (haresear mustard), 1875-1992.

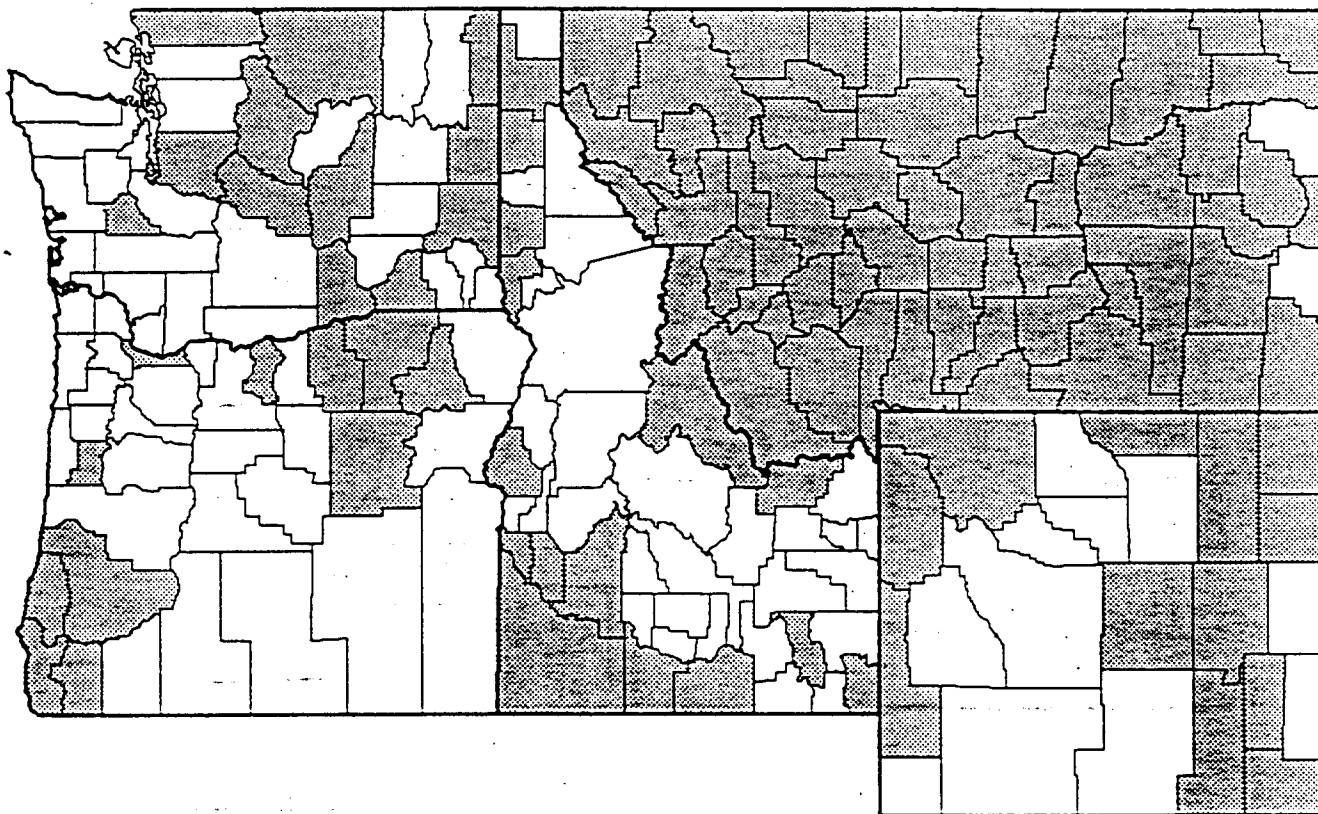


Conringia orientalis INCREASE IN NORTHWEST STATES

$$y = 3.438522 - 0.209985 * x^1 + 0.018732 * x^2 - 0.000118 * x^3$$

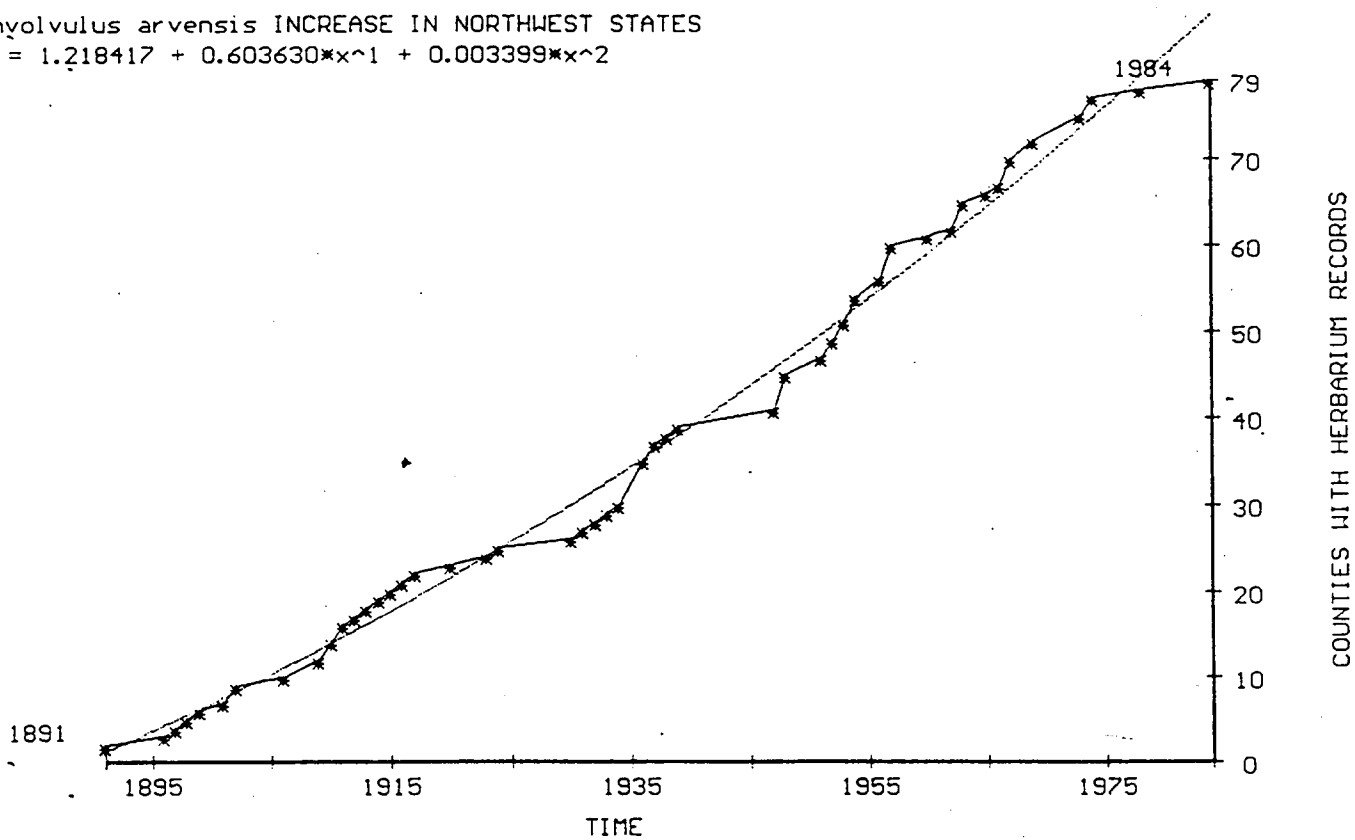


Counties reporting the exotic *Convolvulus arvensis* (field bindweed), 1875-1992.

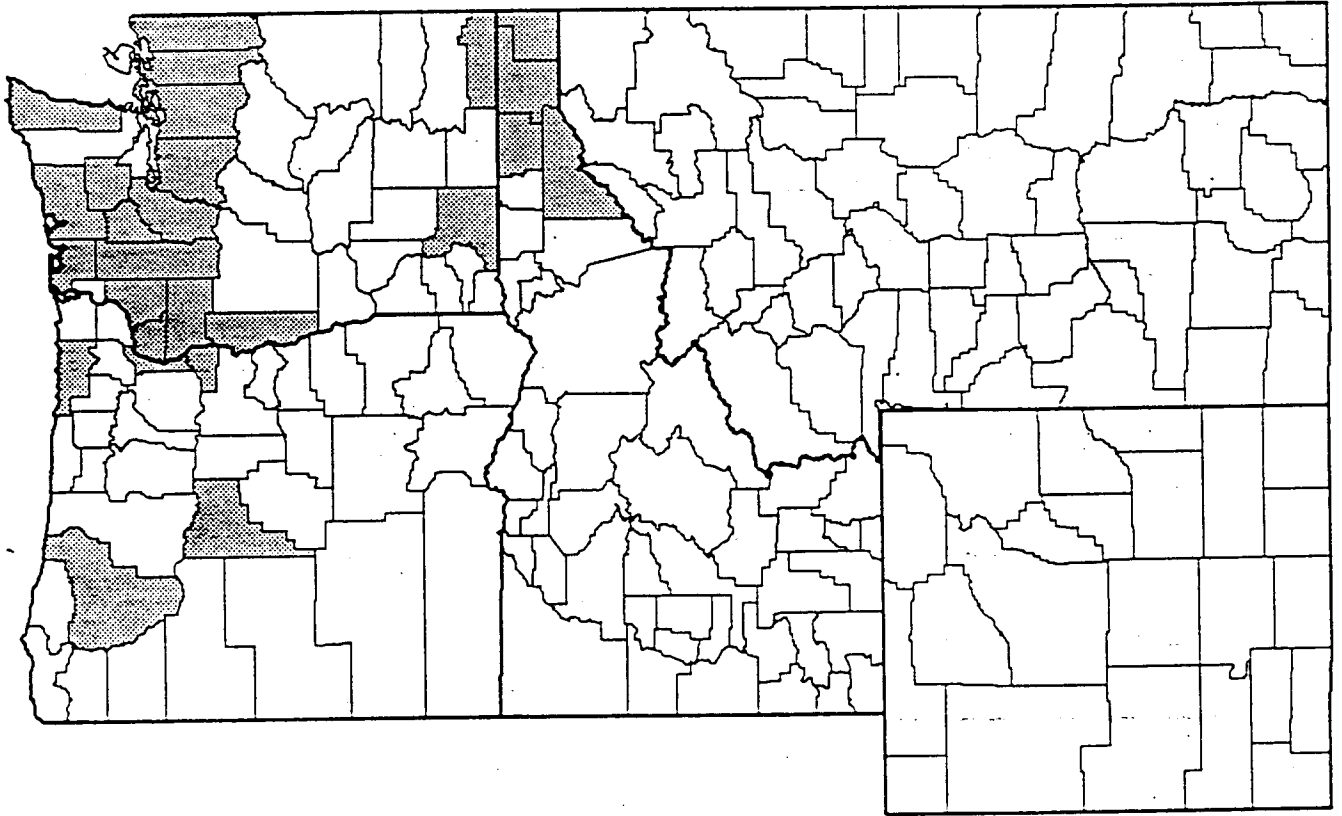


Convolvulus arvensis INCREASE IN NORTHWEST STATES

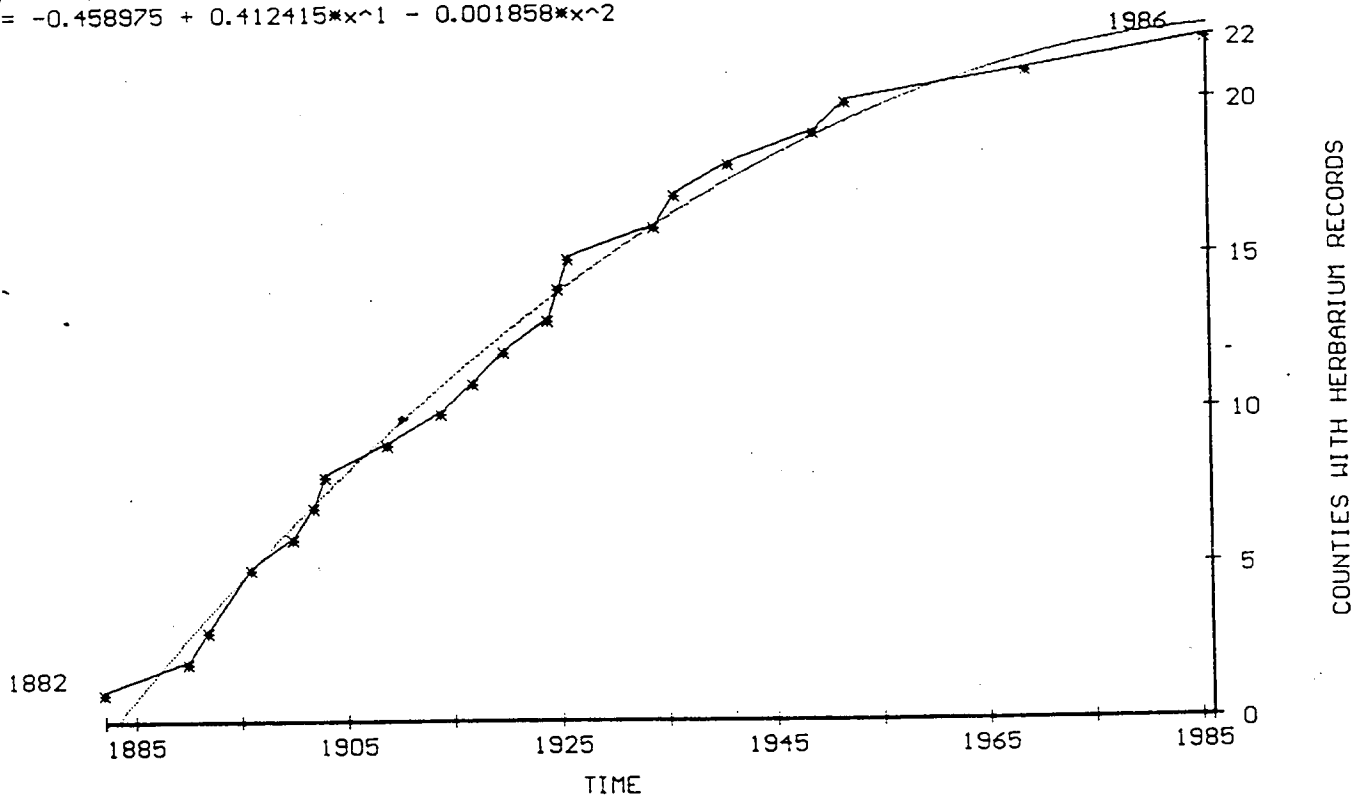
$$y = 1.218417 + 0.603630 \cdot x^1 + 0.003399 \cdot x^2$$



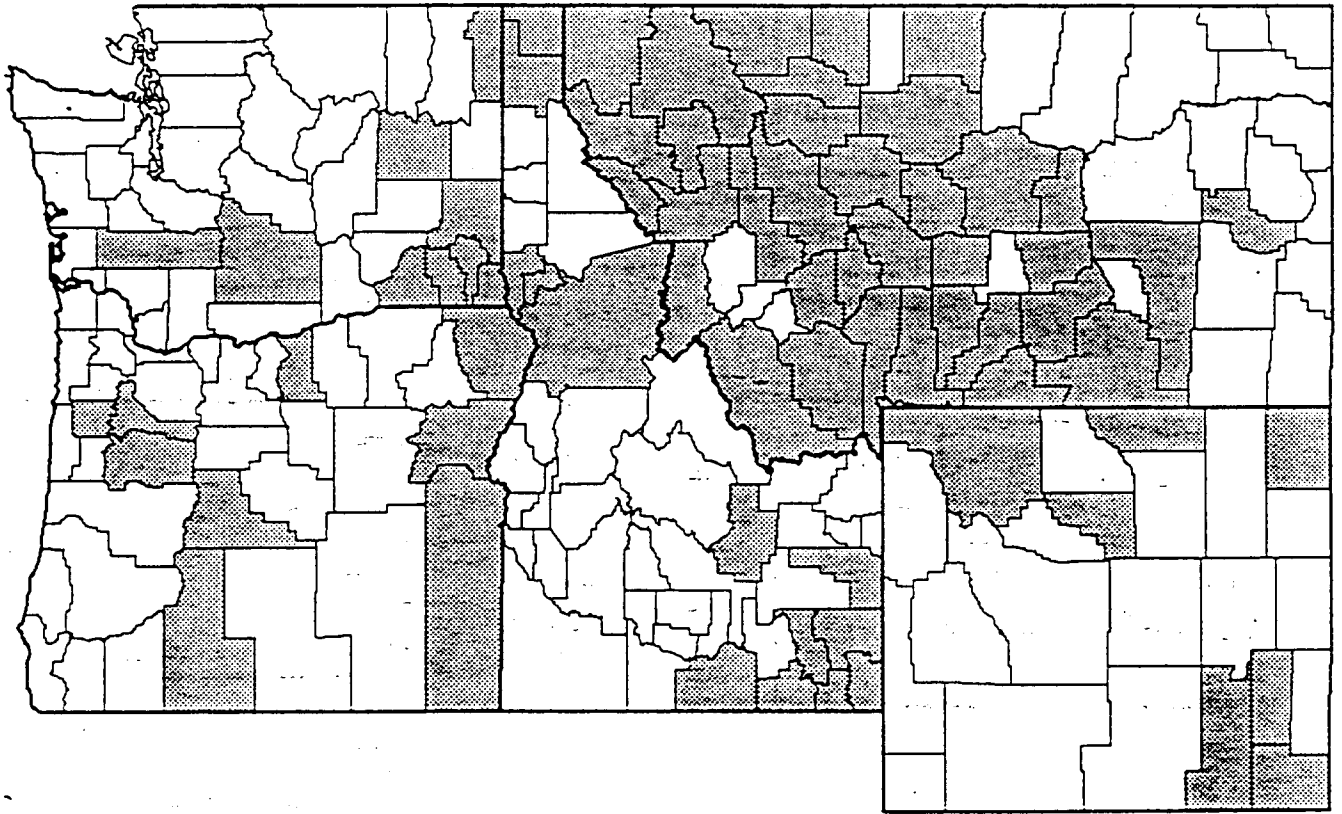
Counties reporting the exotic *Crepis capillaris* (smooth hawkbeard), 1875-1994.



Crepis capillaris INCREASE IN NORTHWEST STATES
 $y = -0.458975 + 0.412415 * x^1 - 0.001858 * x^2$

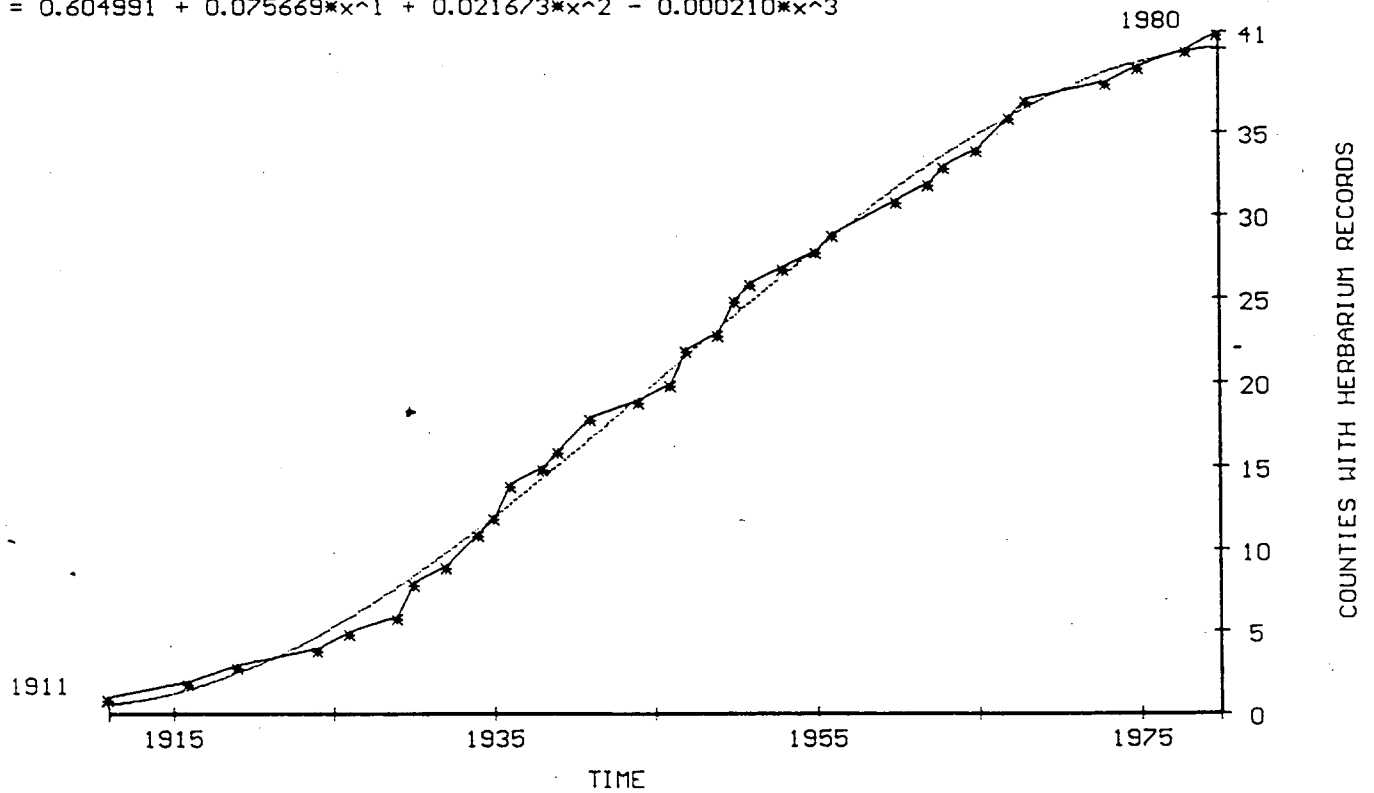


Counties reporting the exotic *Cynoglossum officinale* (houndstongue), 1875-1993.

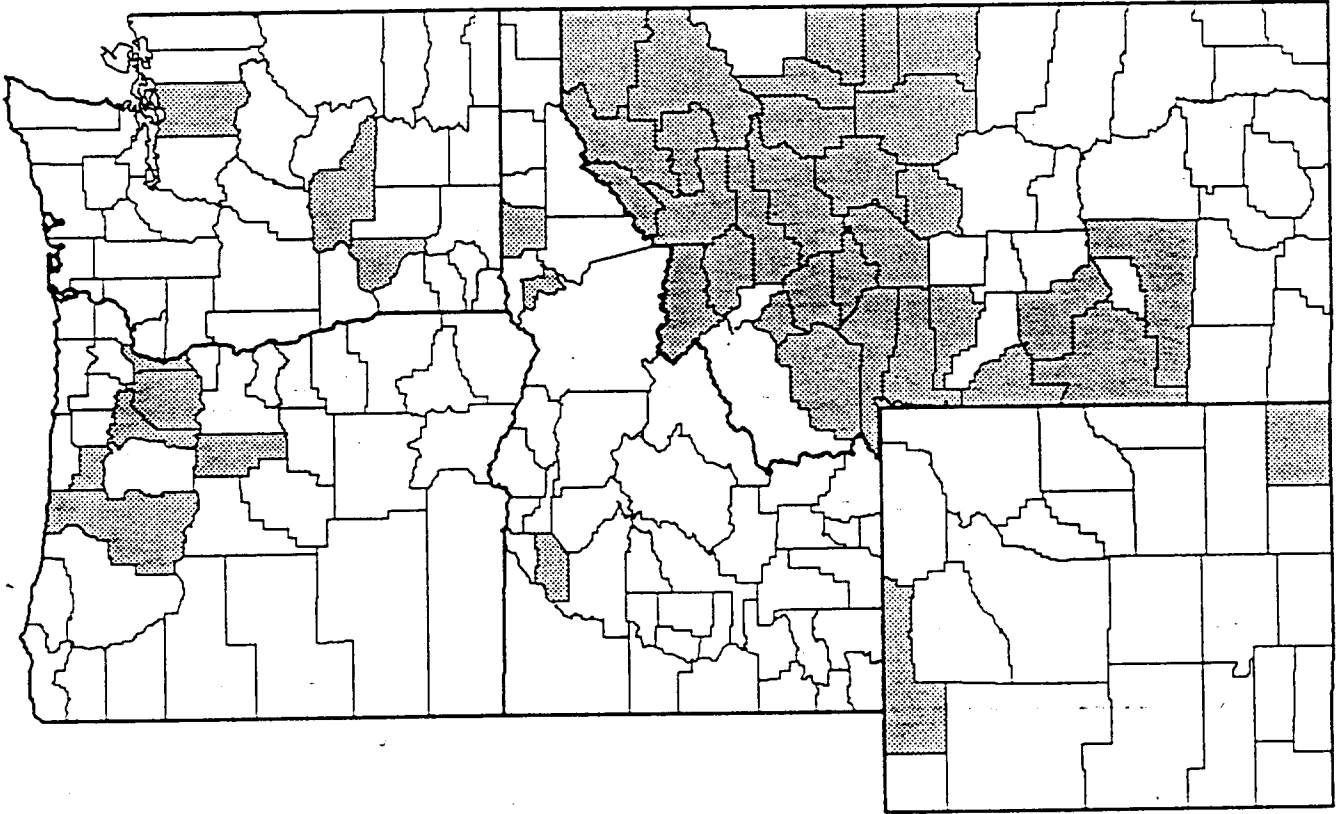


Cynoglossum officinale INCREASE IN NORTHWEST STATES

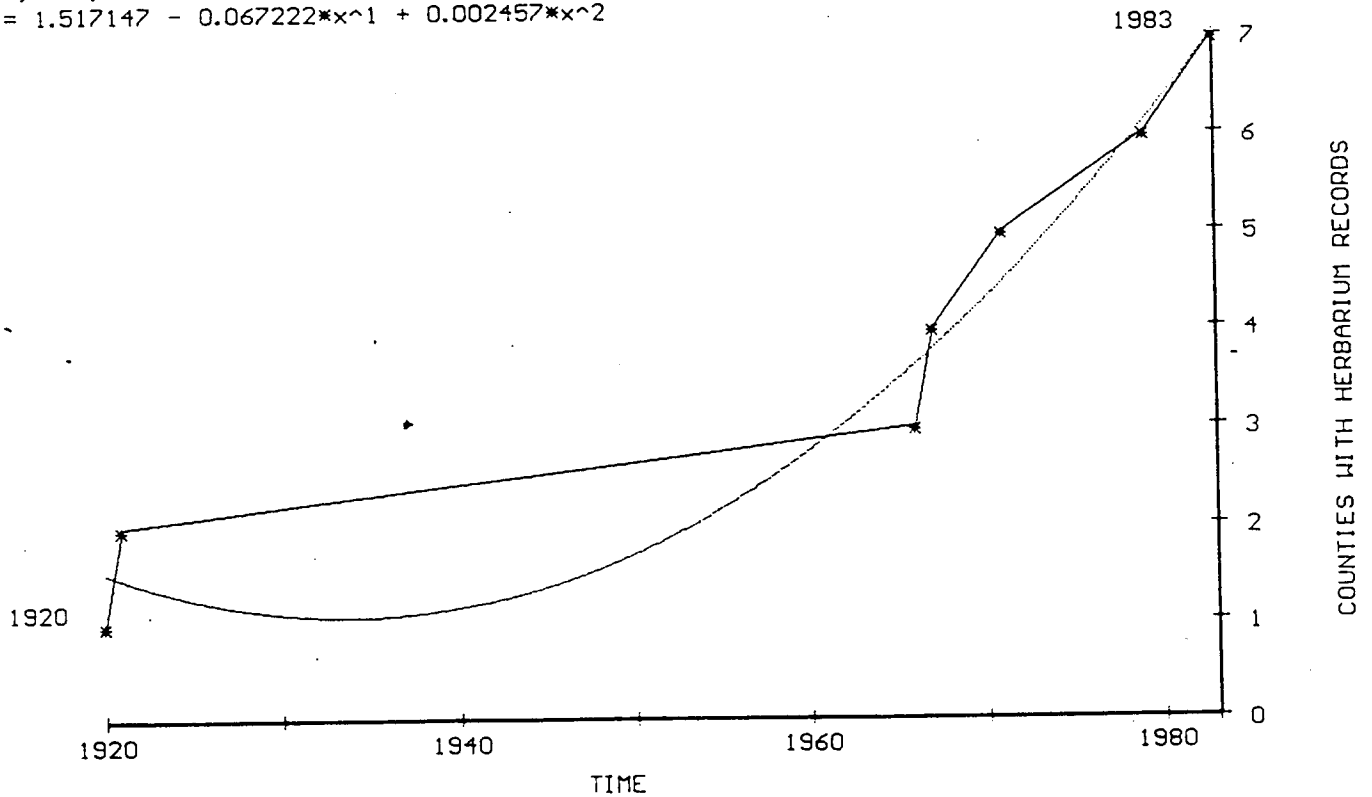
$$y = 0.604991 + 0.075669 * x^1 + 0.021673 * x^2 - 0.000210 * x^3$$



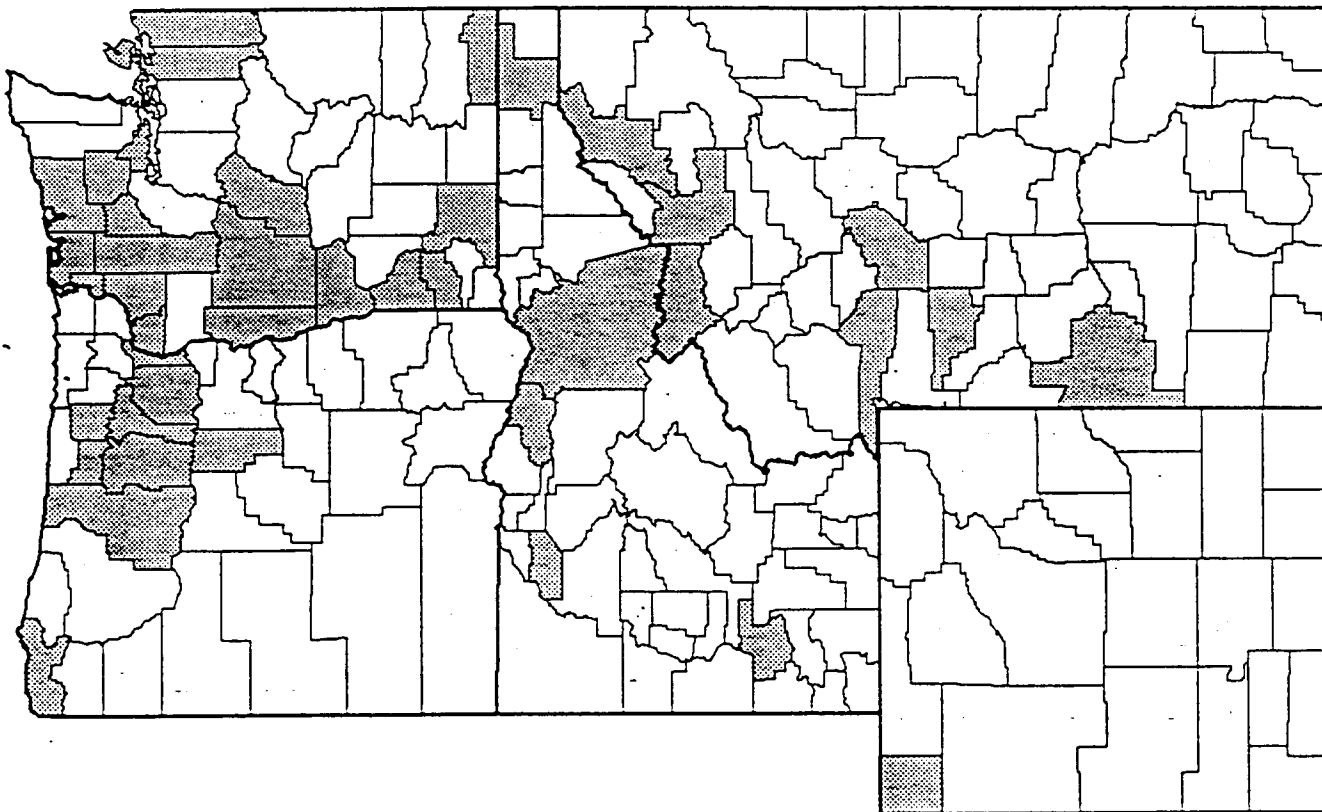
Counties reporting the exotic *Dactylis glomerata* (orchardgrass), 1875-1993.



Dactylis glomerata INCREASE IN NORTHWEST STATES
 $y = 1.517147 - 0.067222 * x^1 + 0.002457 * x^2$

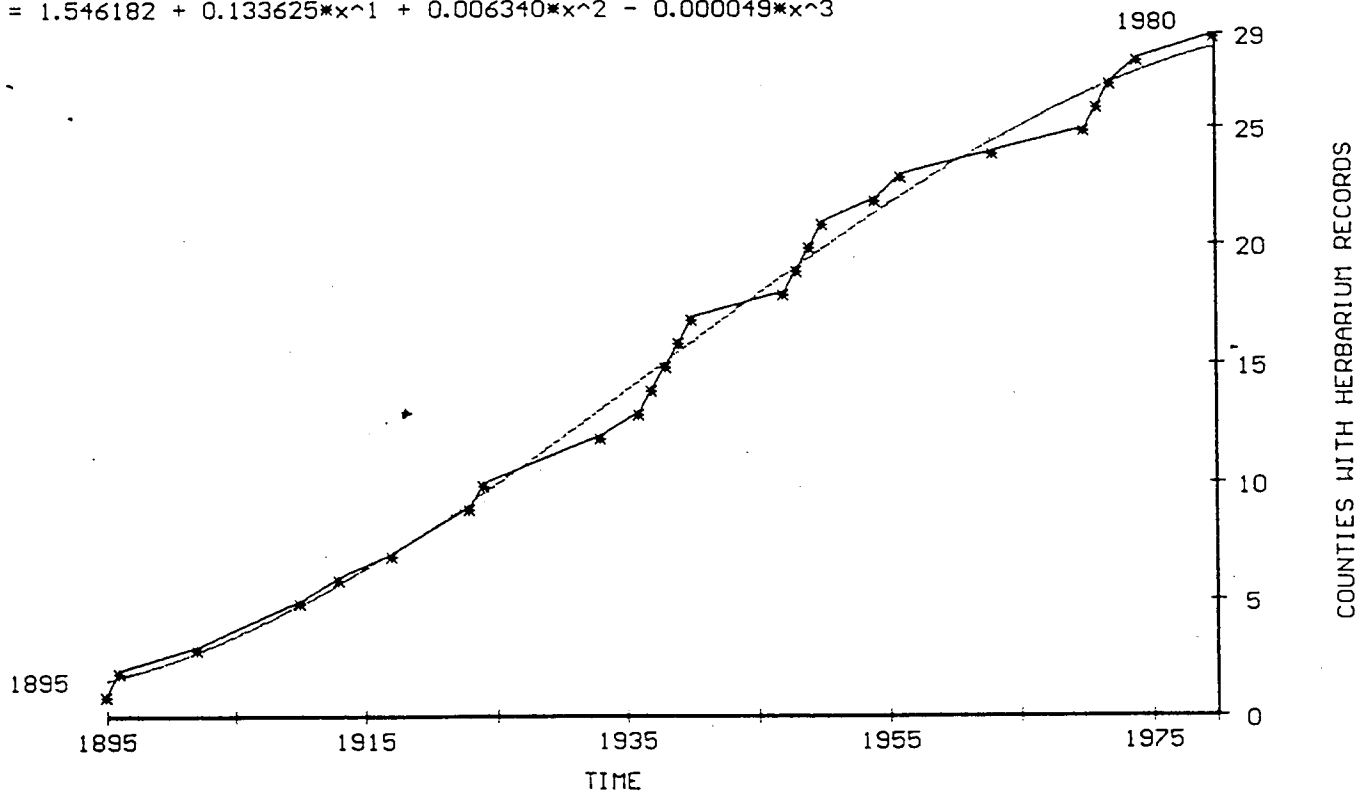


Counties reporting the exotic *Daucus carota* (wild carrot), 1875-1994.

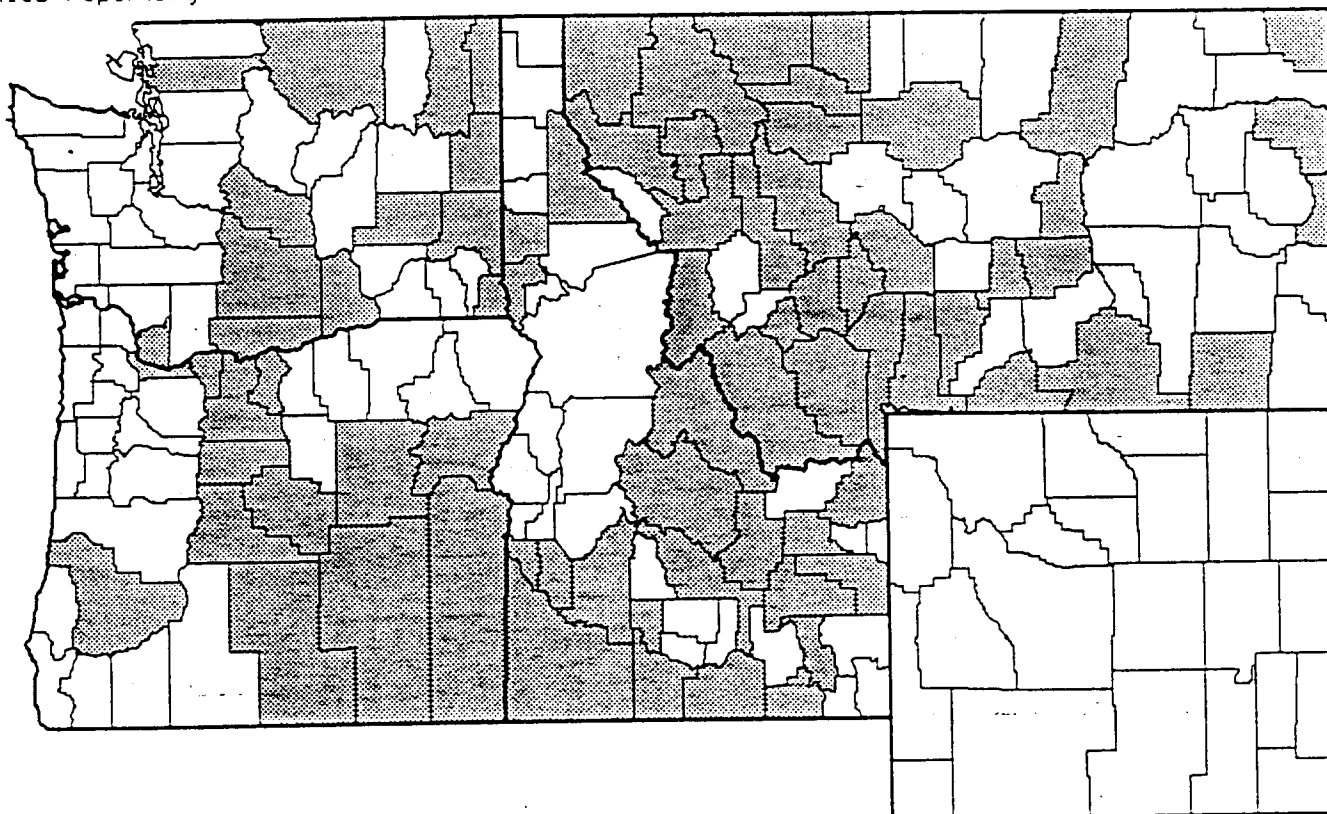


Daucus carota INCREASE IN NORTHWEST STATES

$$y = 1.546182 + 0.133625 * x^1 + 0.006340 * x^2 - 0.000049 * x^3$$

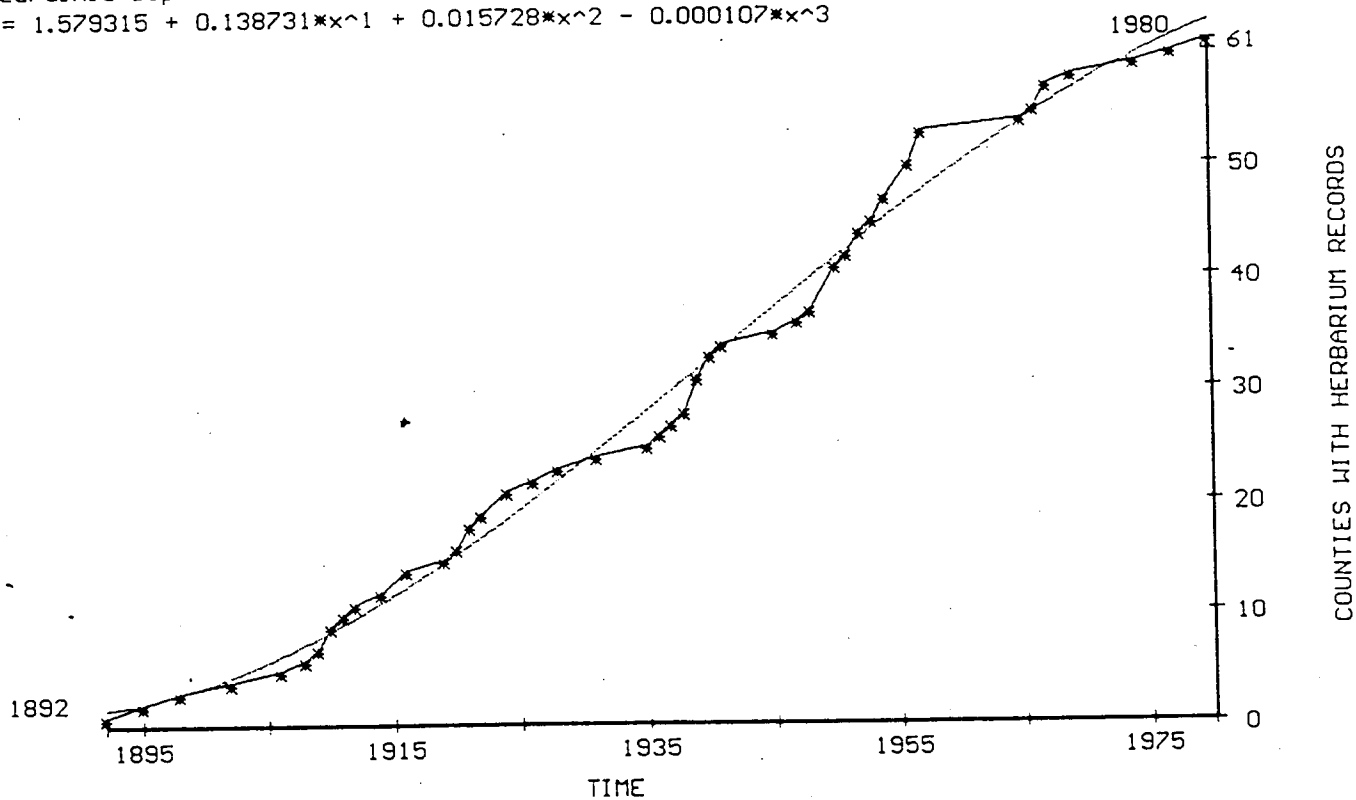


Counties reporting the exotic *Descurainia sophia* (flixweed), 1875-1994.

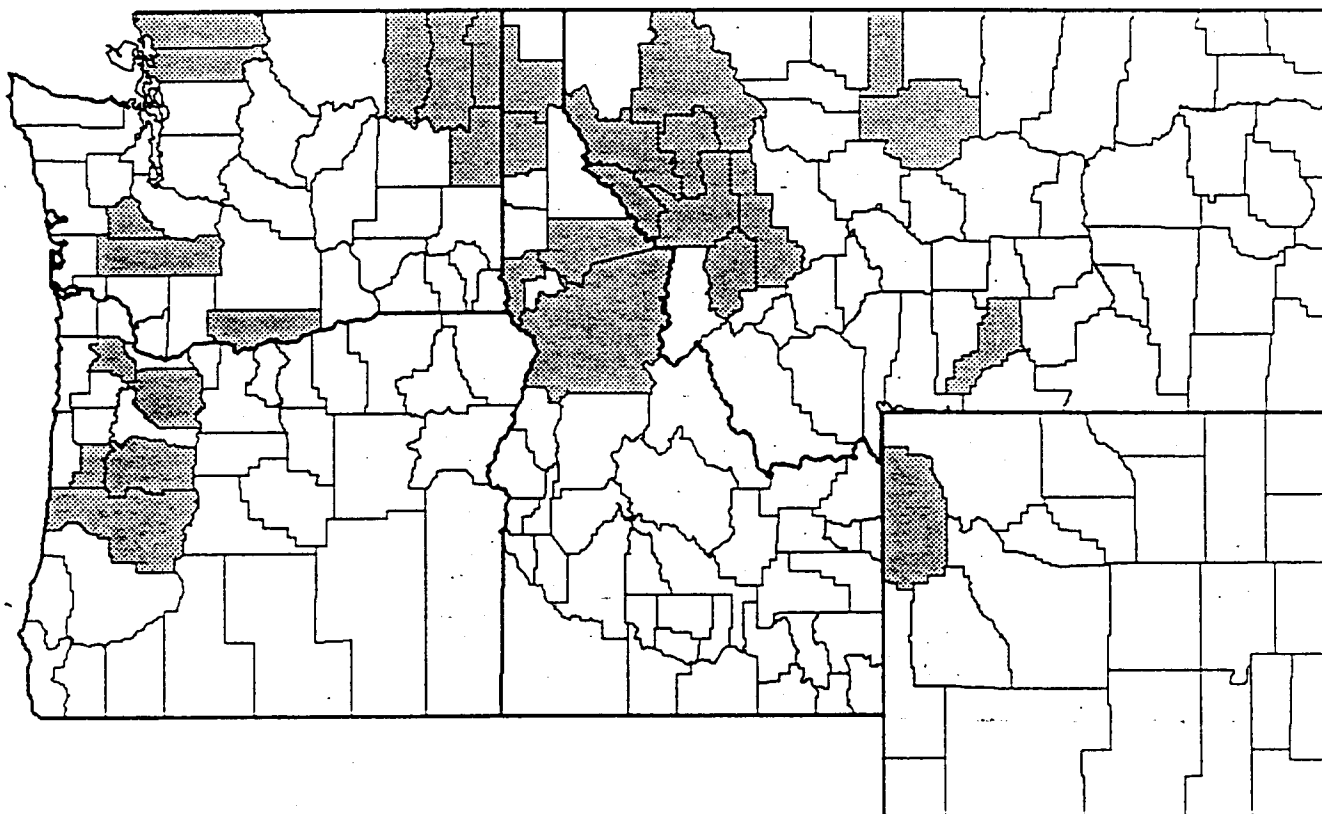


Descurainia sophia INCREASE IN NORTHWEST STATES

$$y = 1.579315 + 0.138731 \cdot x^1 + 0.015728 \cdot x^2 - 0.000107 \cdot x^3$$

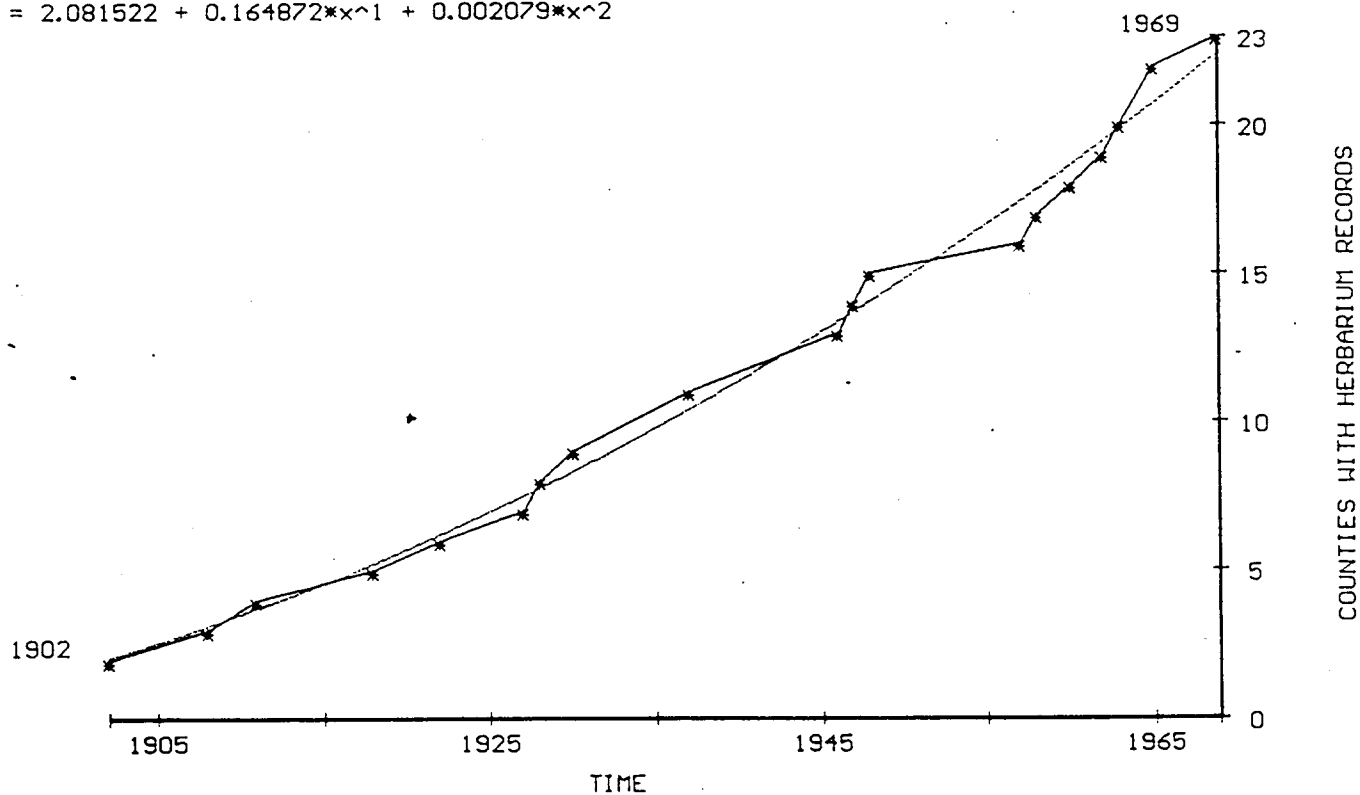


Counties reporting the exotic *Dianthus armeria* (deptford pink), 1875-1993.

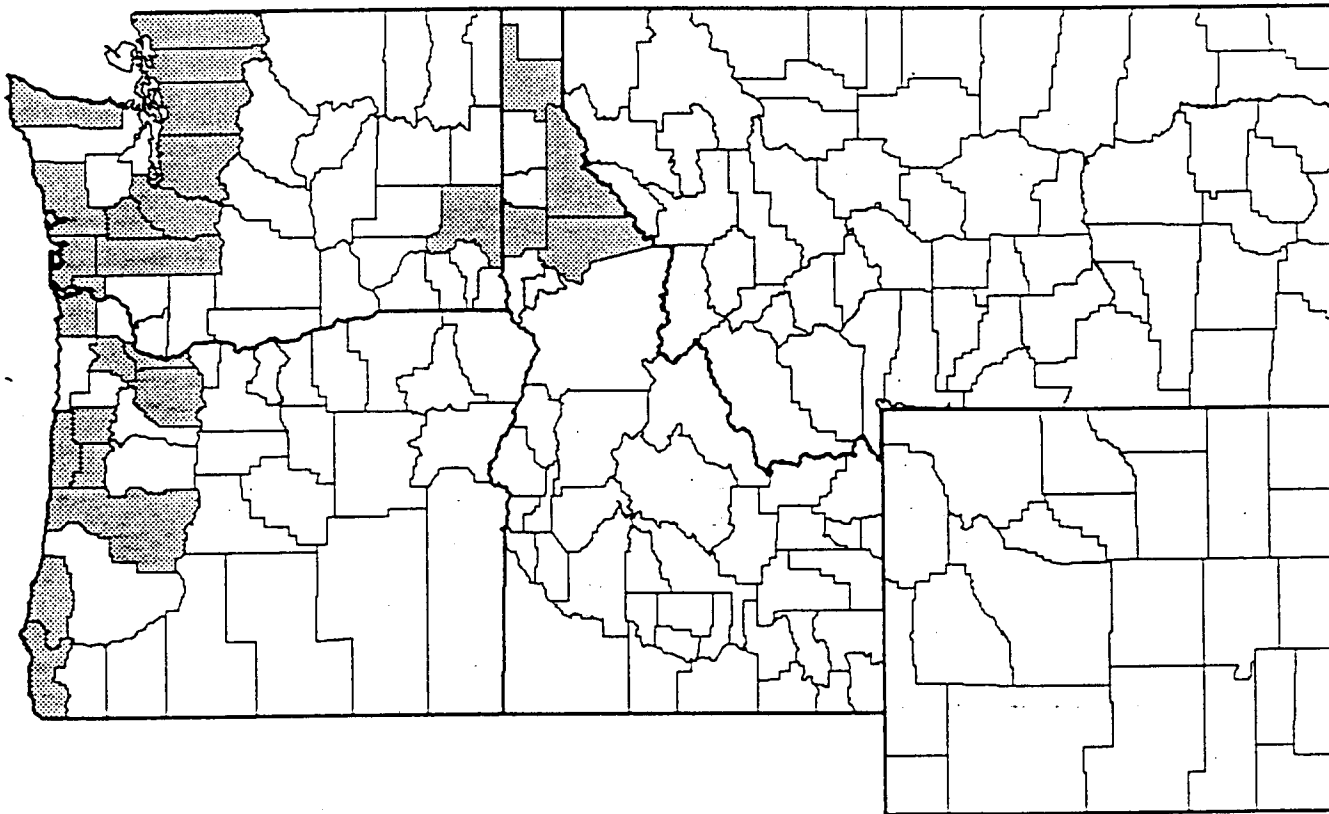


Dianthus armeria INCREASE IN NORTHWEST STATES

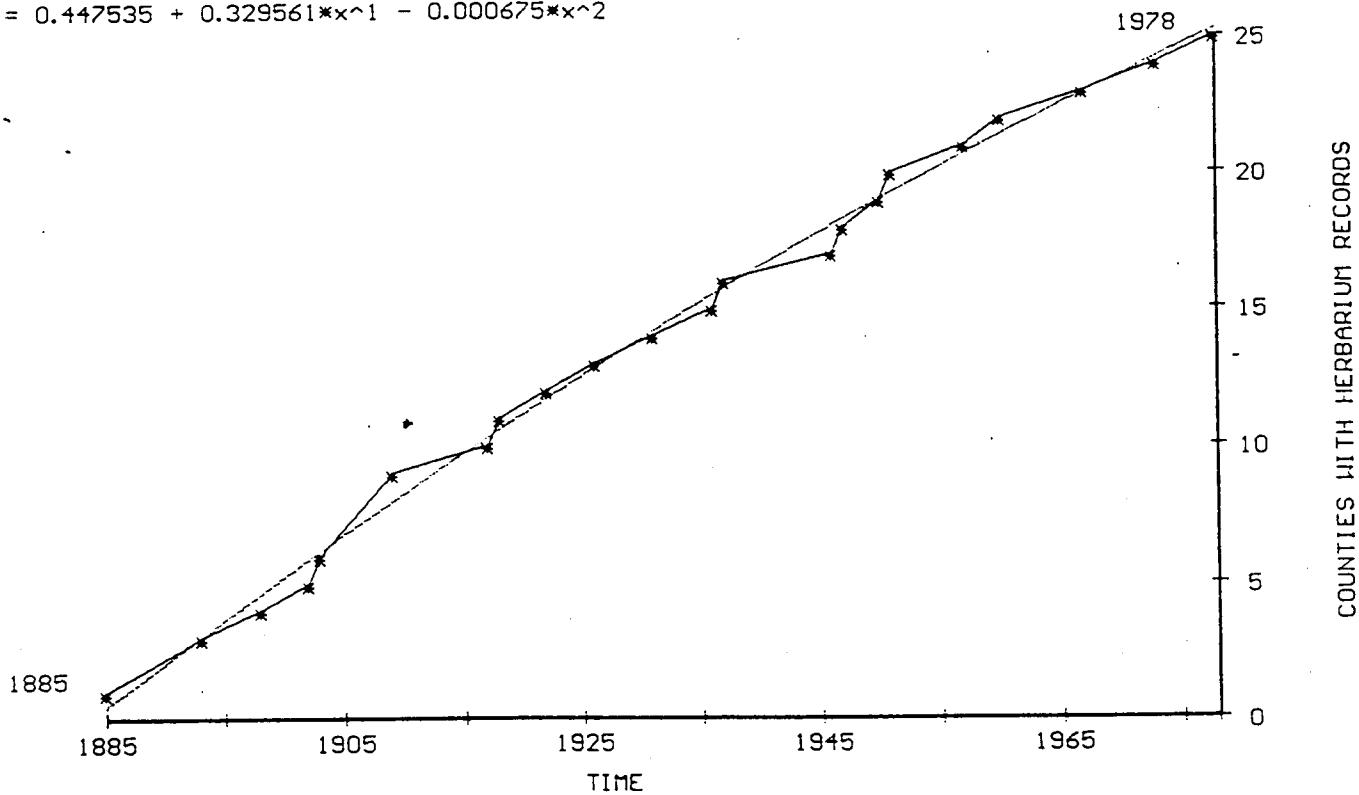
$$y = 2.081522 + 0.164872 * x^1 + 0.002079 * x^2$$



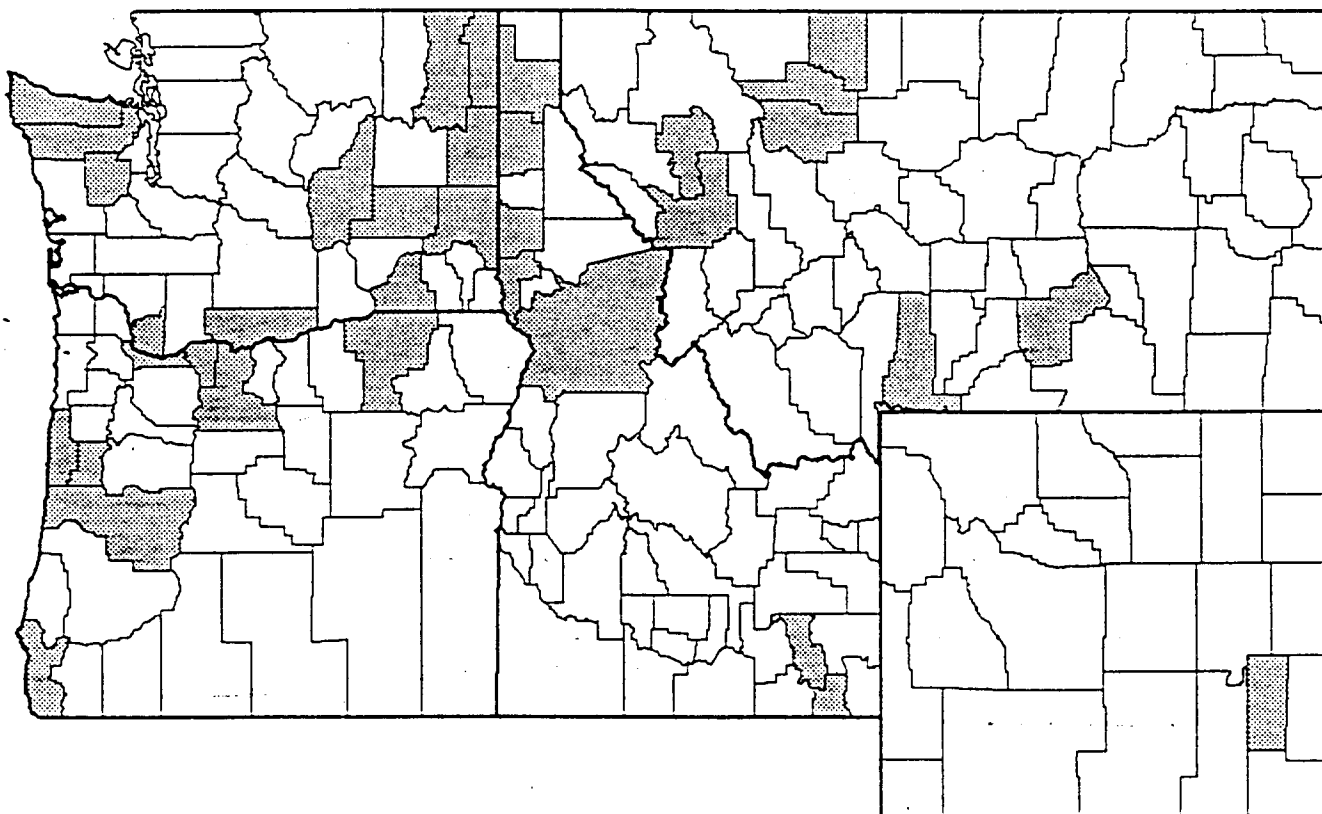
Counties reporting the exotic *Digitalis purpurea* (foxglove), 1875-1990.



Digitalis purpurea INCREASE IN NORTHWEST STATES
 $y = 0.447535 + 0.329561 * x^1 - 0.000675 * x^2$

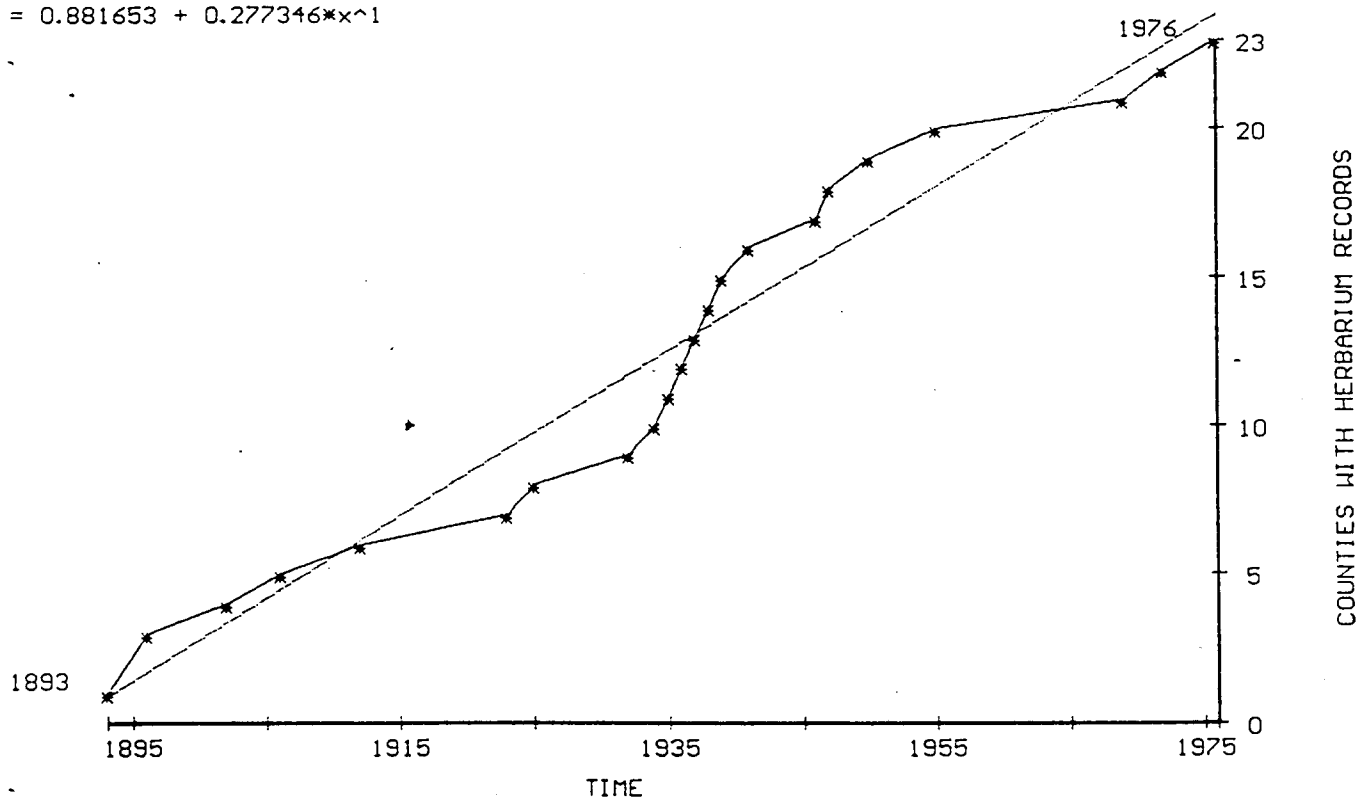


Counties reporting the exotic *Dipsacus fullonum* (common teasel), 1875-1993.

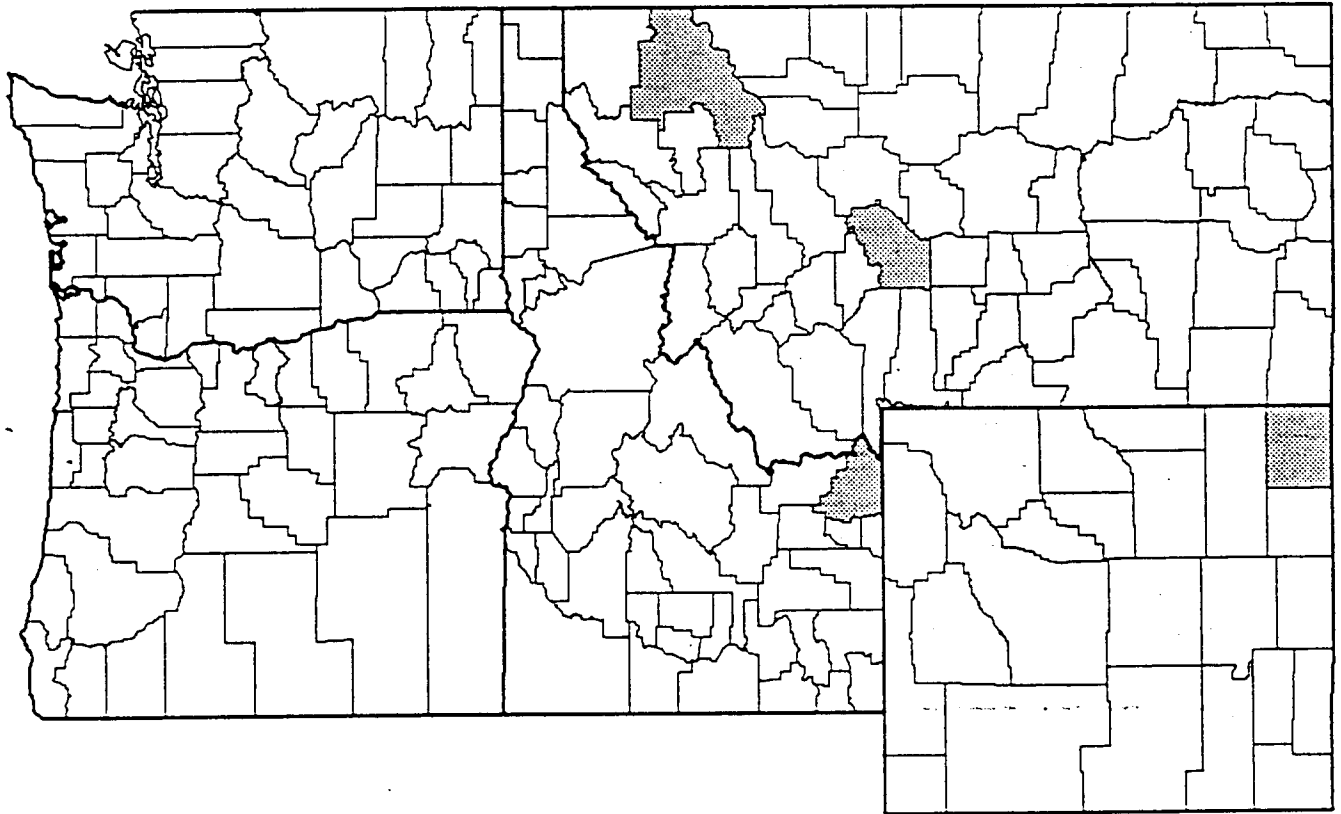


Dipsacus fullonum INCREASE IN NORTHWEST STATES

$$y = 0.881653 + 0.277346 * x^1$$

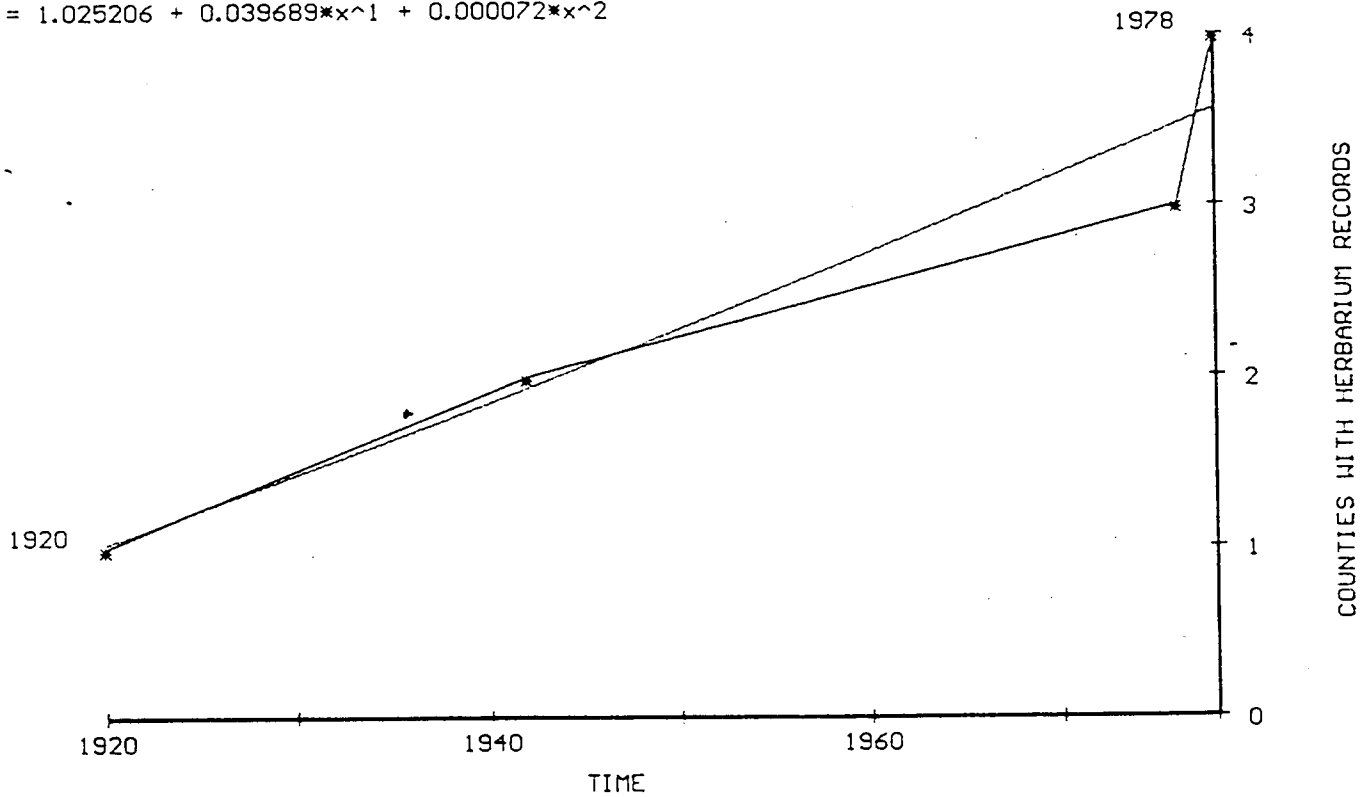


Counties reporting the exotic *Dracocephalum thymiflorum* (thyme leaved dragonhead), 1875-1978.

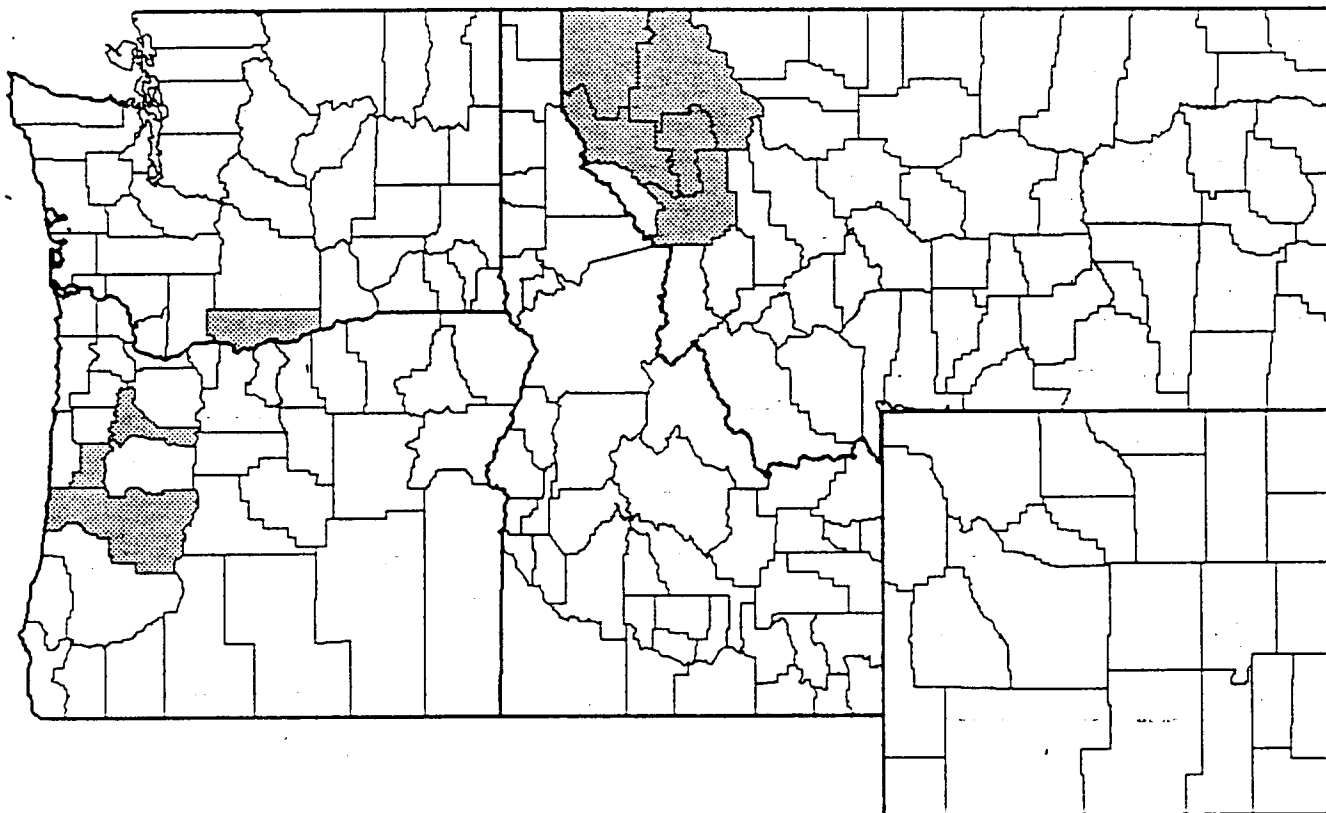


Dracocephalum thymiflorum INCREASE IN NORTHWEST STATES

$$y = 1.025206 + 0.039689 * x^1 + 0.000072 * x^2$$

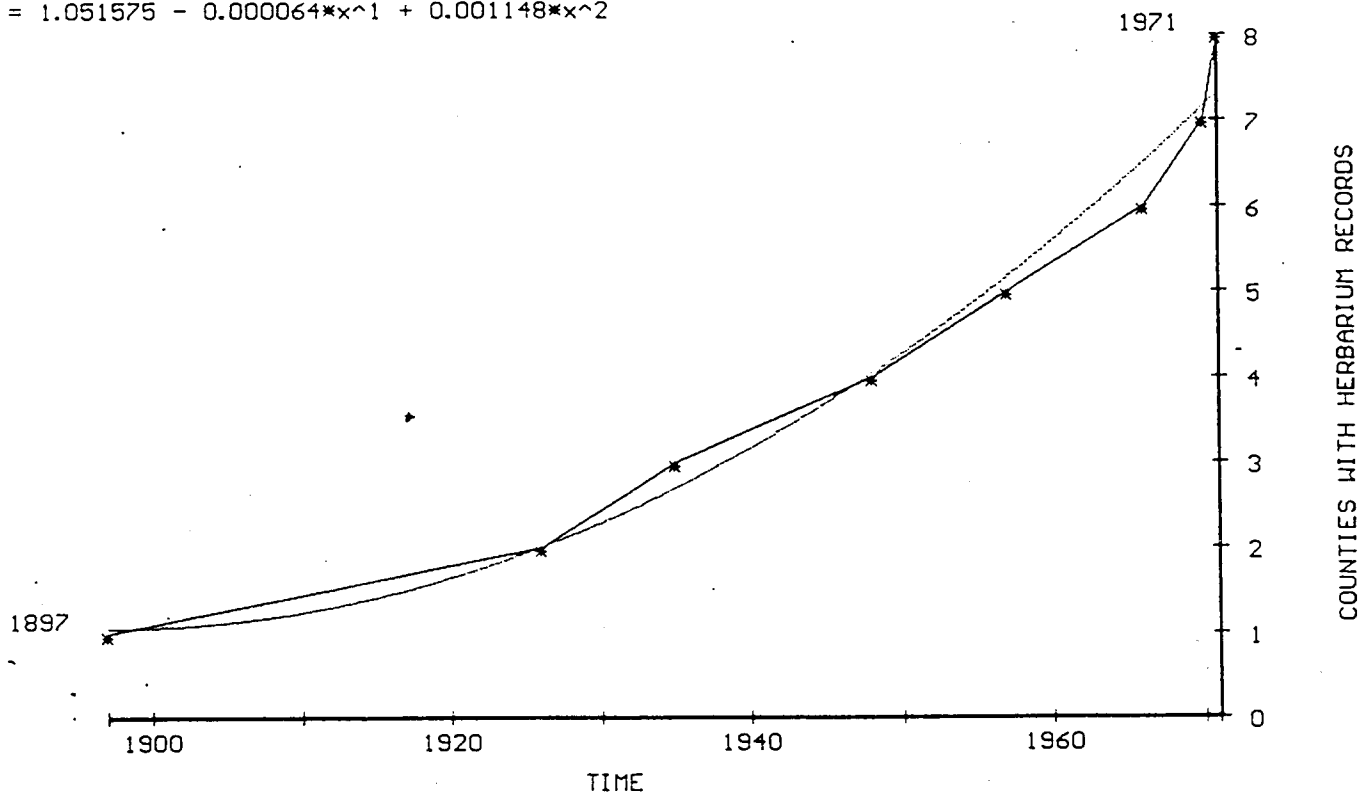


Counties reporting the exotic *Eleocharis ovata* (✓), 1875-1993.

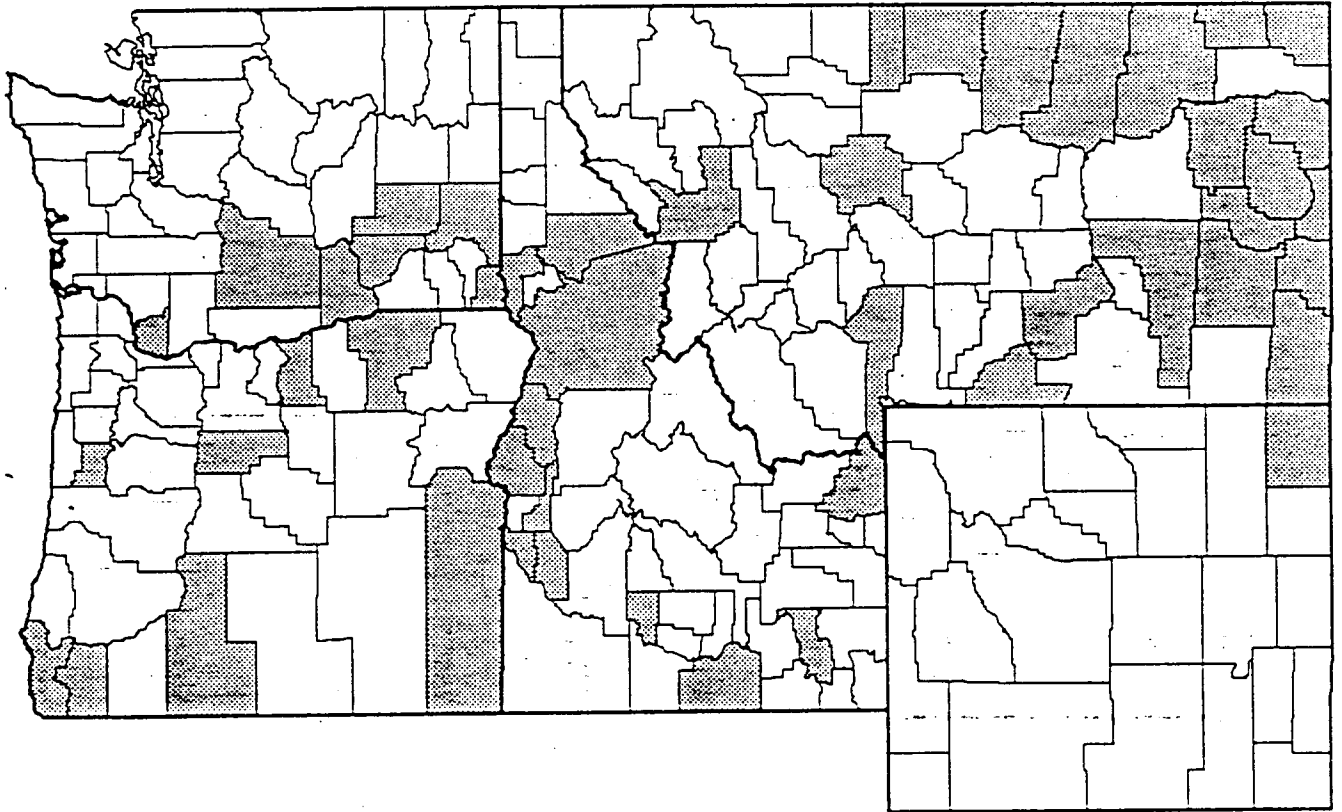


Eleocharis ovata INCREASE IN NORTHWEST STATES

$$y = 1.051575 - 0.000064 * x^1 + 0.001148 * x^2$$

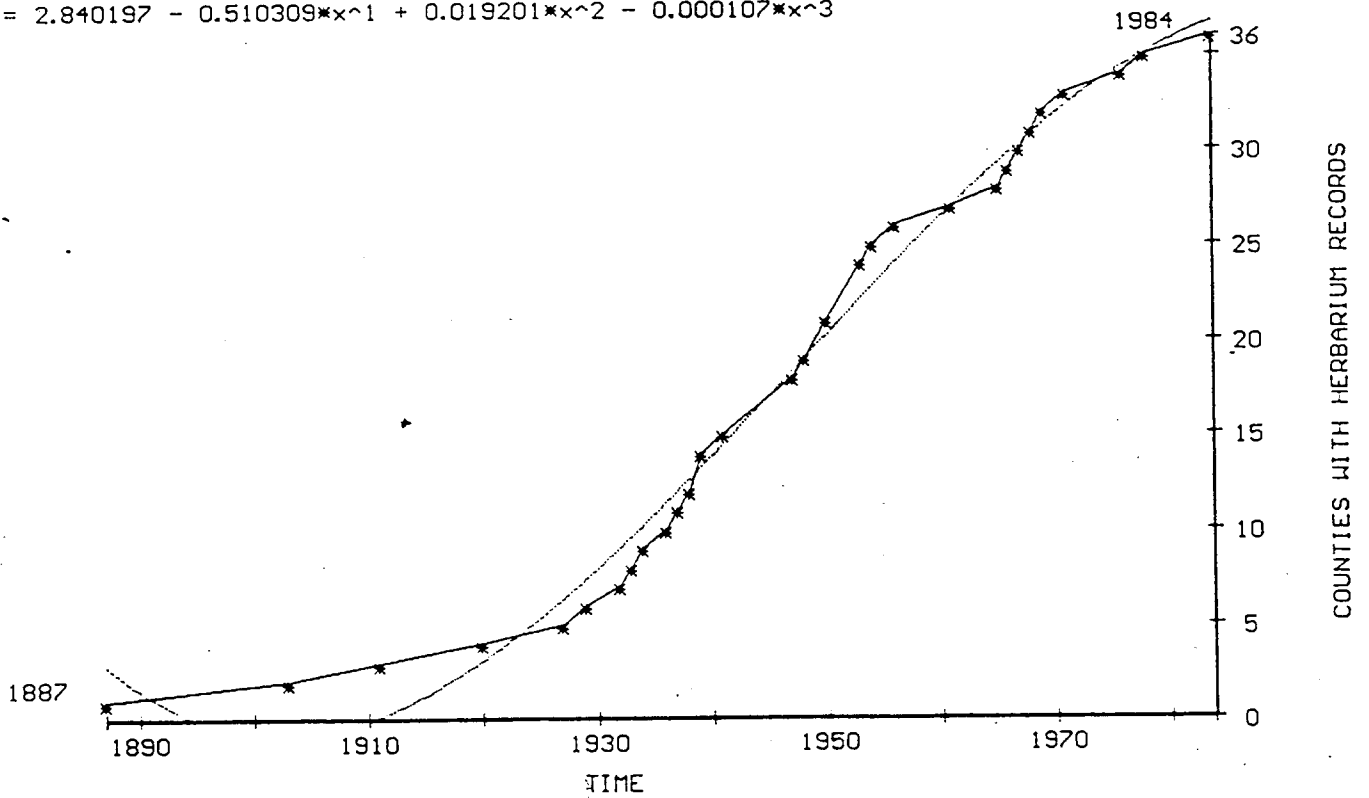


Counties reporting the exotic *Eragrostis cilianensis* (stinkgrass), 1875-1993.

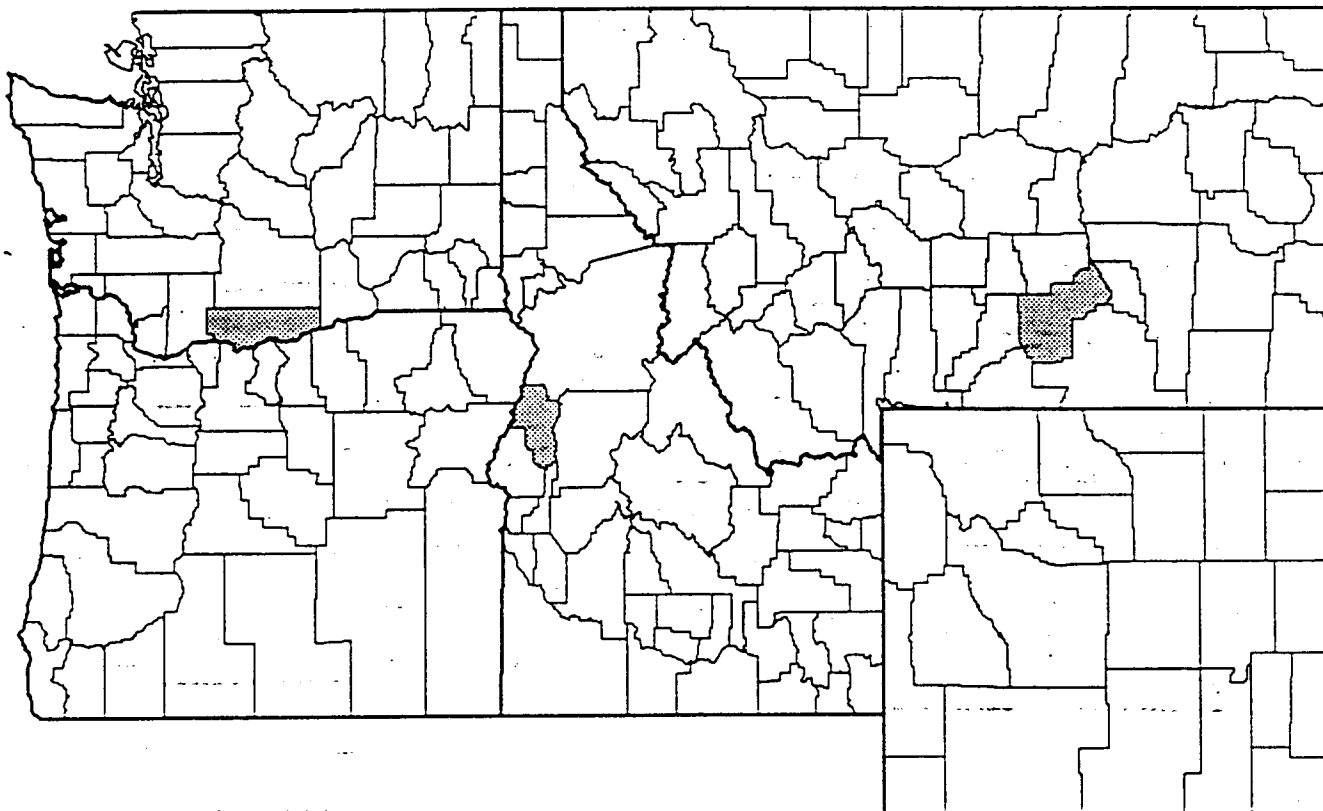


Eragrostis cilianensis INCREASE IN NORTHWEST STATES

$$y = 2.840197 - 0.510309 \times x^1 + 0.019201 \times x^2 - 0.000107 \times x^3$$

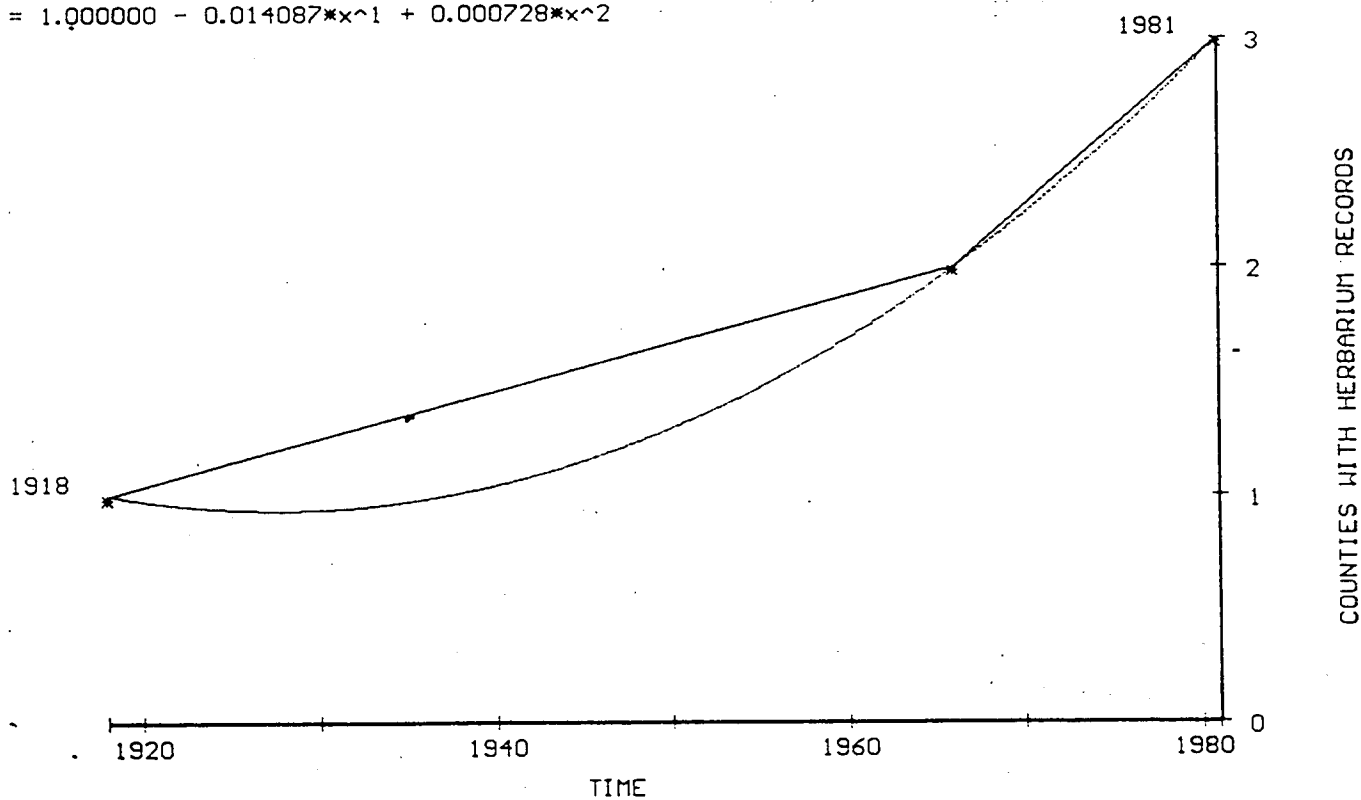


Counties reporting the exotic *Eragrostis pilosa* (India lovegrass), 1875-1981.

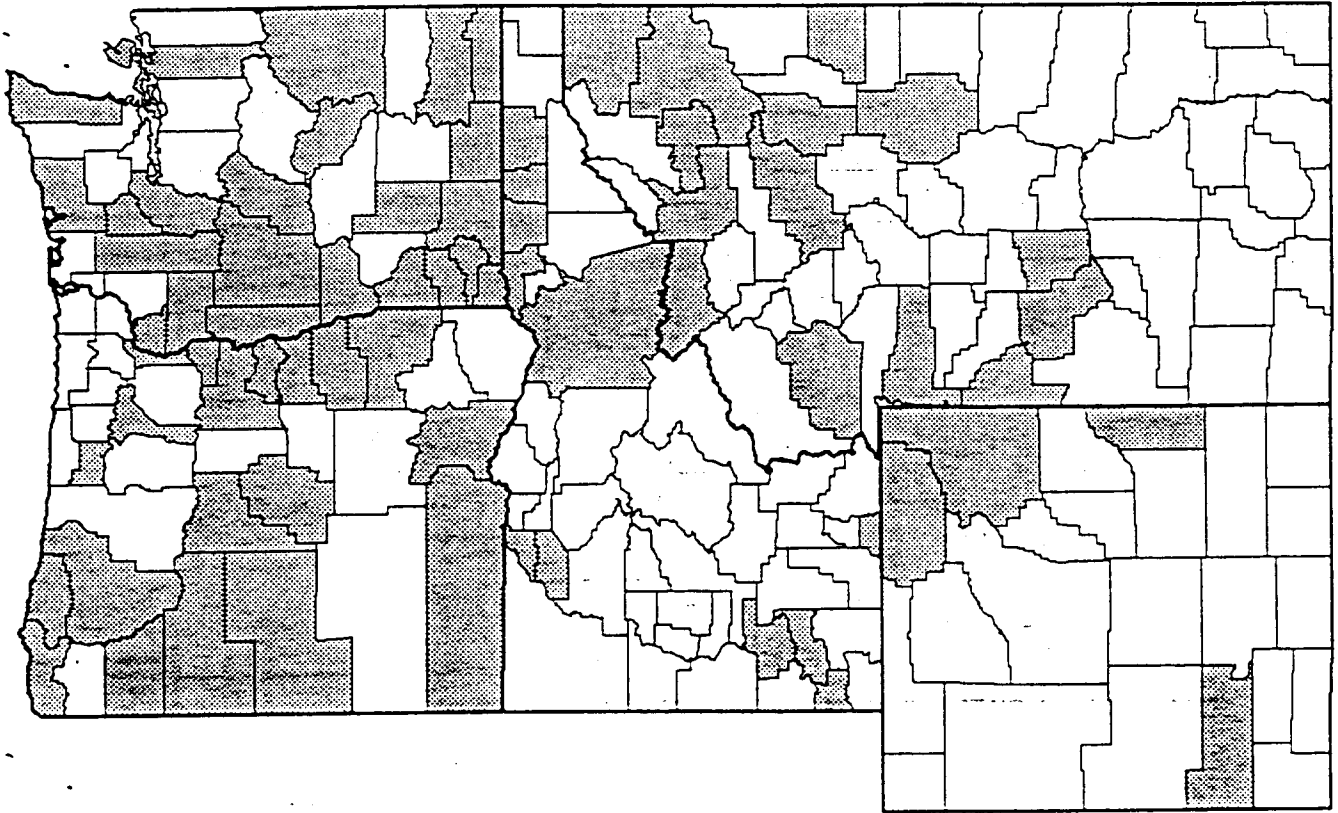


Eragrostis pilosa INCREASE IN NORTHWEST STATES

$$y = 1.000000 - 0.014087 * x^1 + 0.000728 * x^2$$

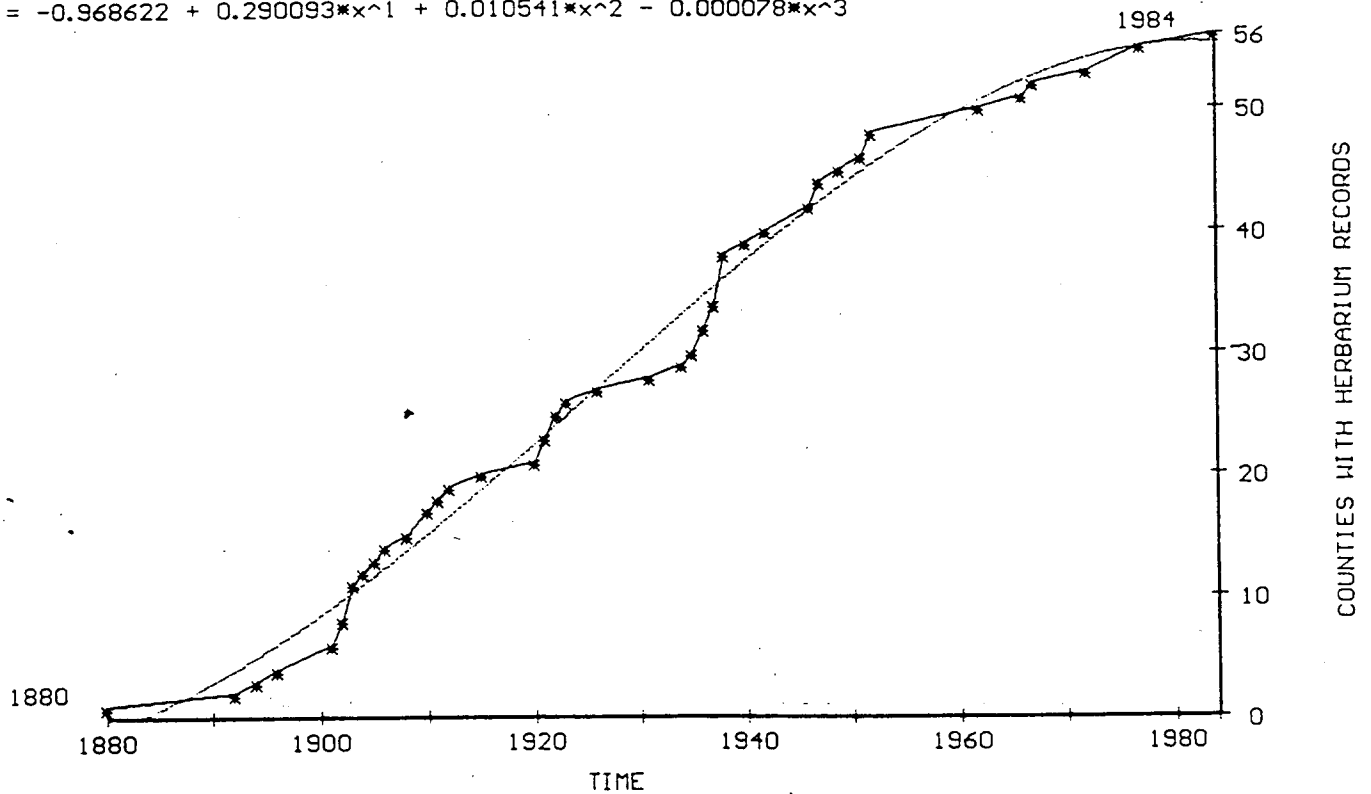


Counties reporting the exotic *Erodium cicutarium* (redstem filaree), 1875-1994.

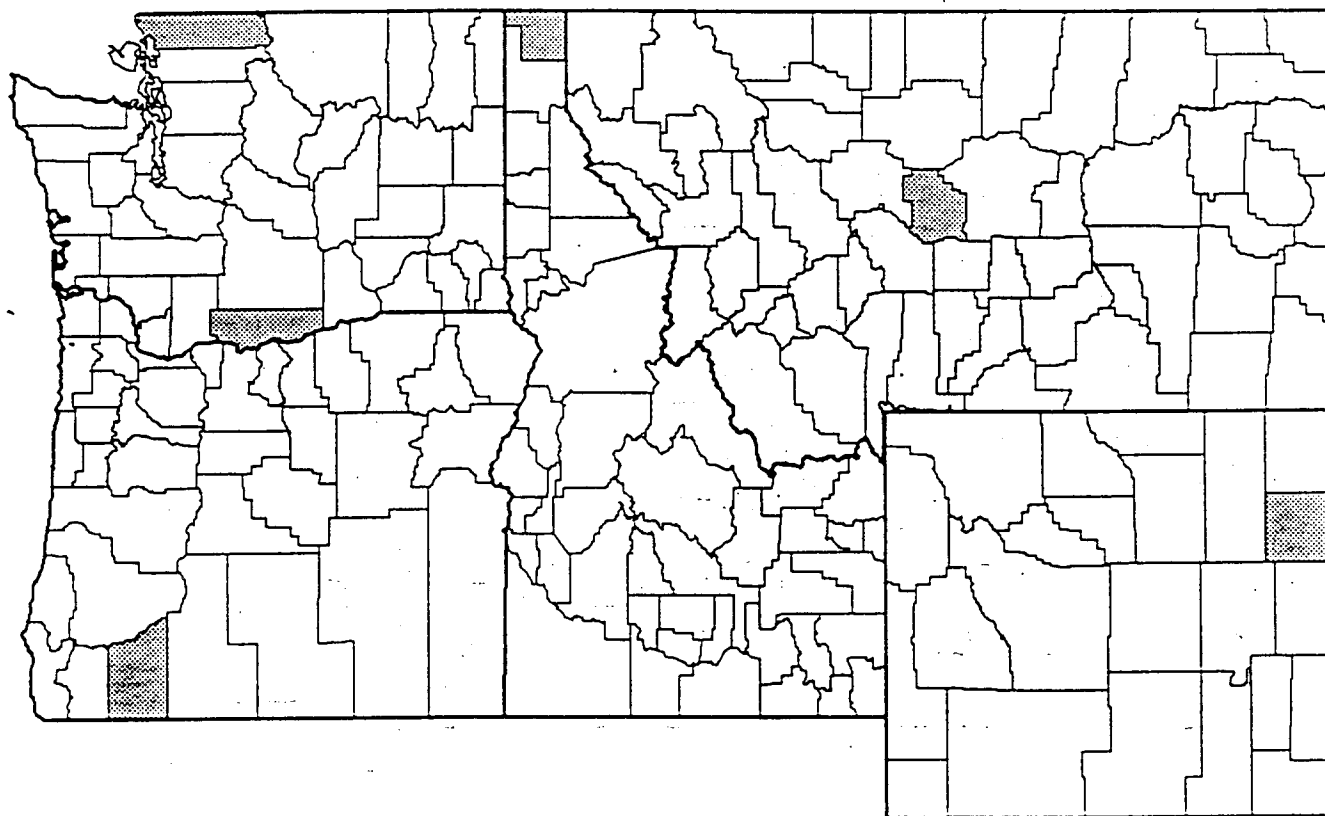


Erodium cicutarium INCREASE IN NORTHWEST STATES

$$y = -0.968622 + 0.290093 * x^1 + 0.010541 * x^2 - 0.000078 * x^3$$

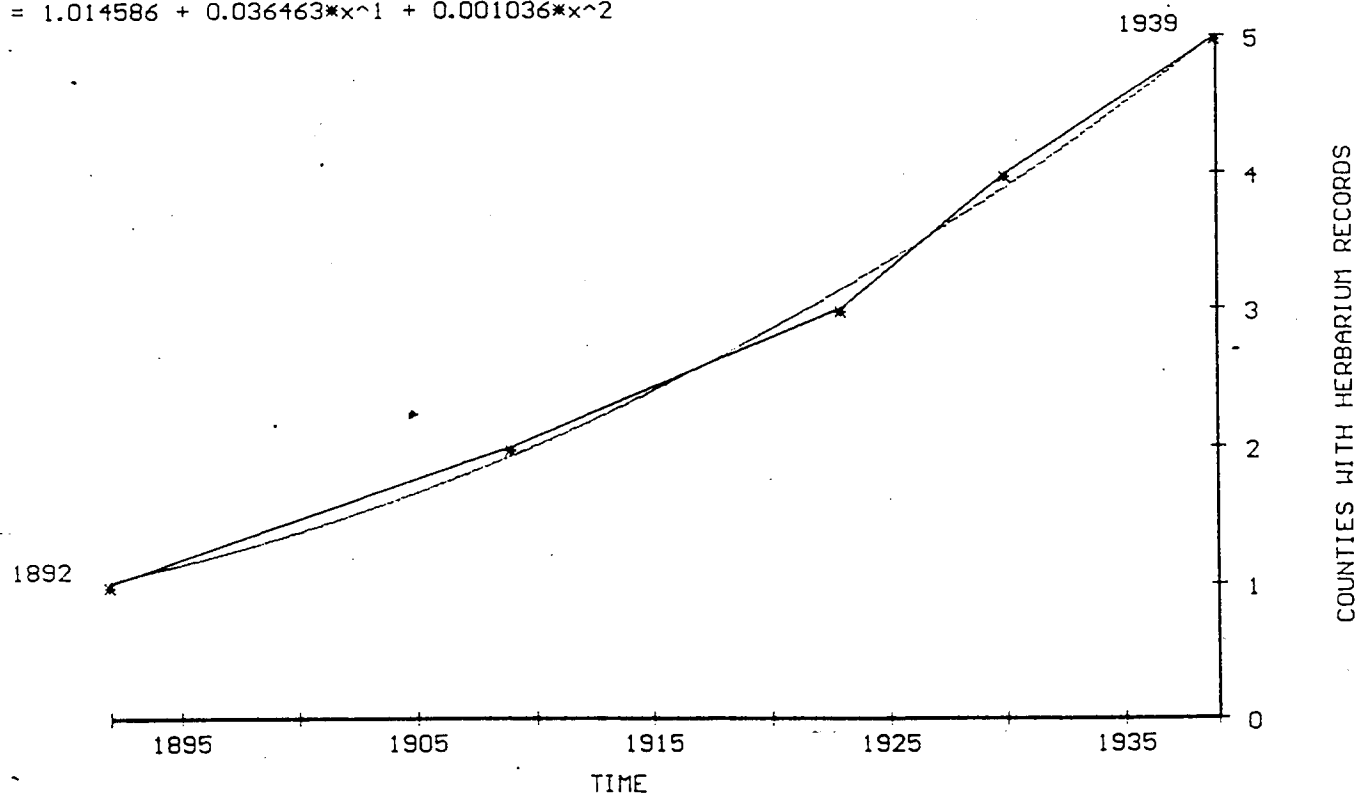


Counties reporting the exotic *Erucastrum gallicum* (dog mustard), 1875-1984.

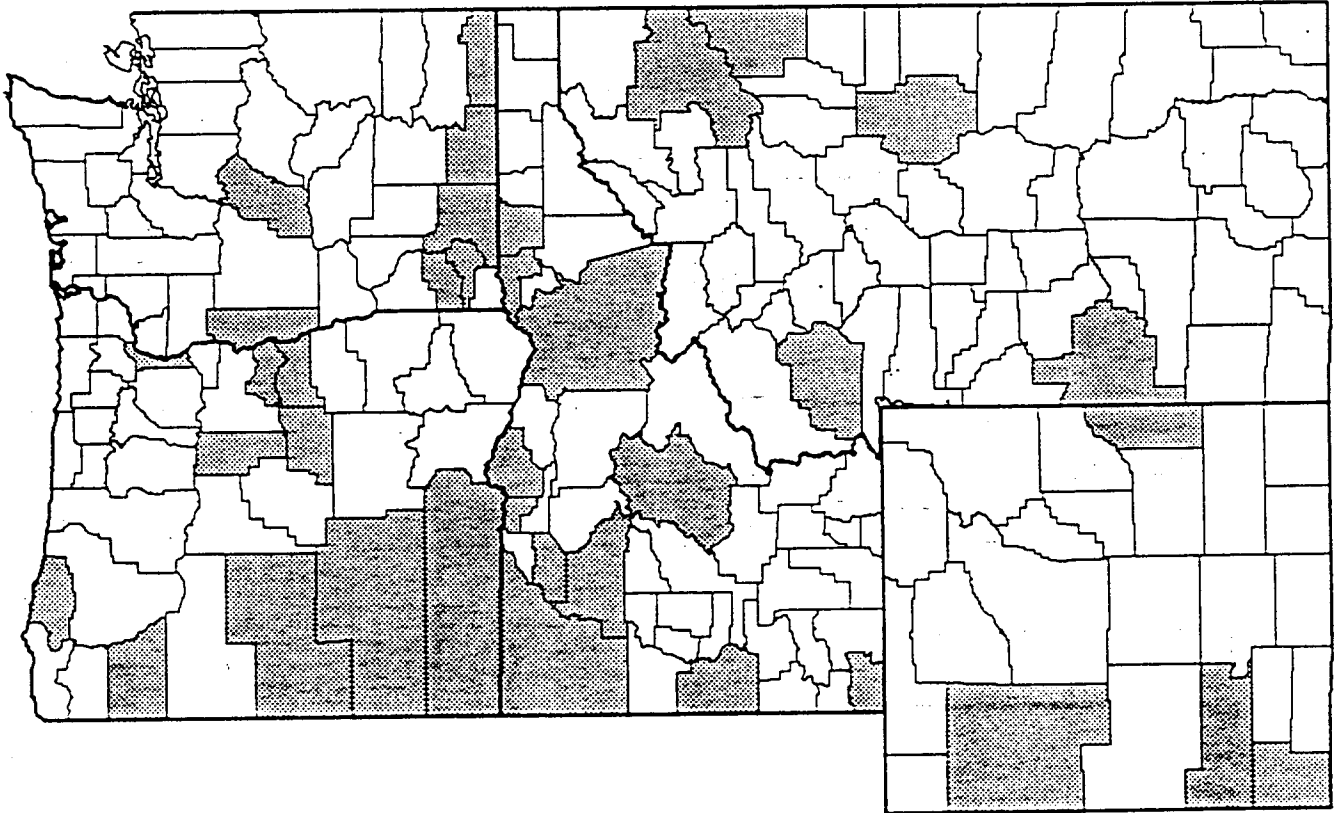


Erucastrum gallicum INCREASE IN NORTHWEST STATES

$$y = 1.014586 + 0.036463 * x^1 + 0.001036 * x^2$$

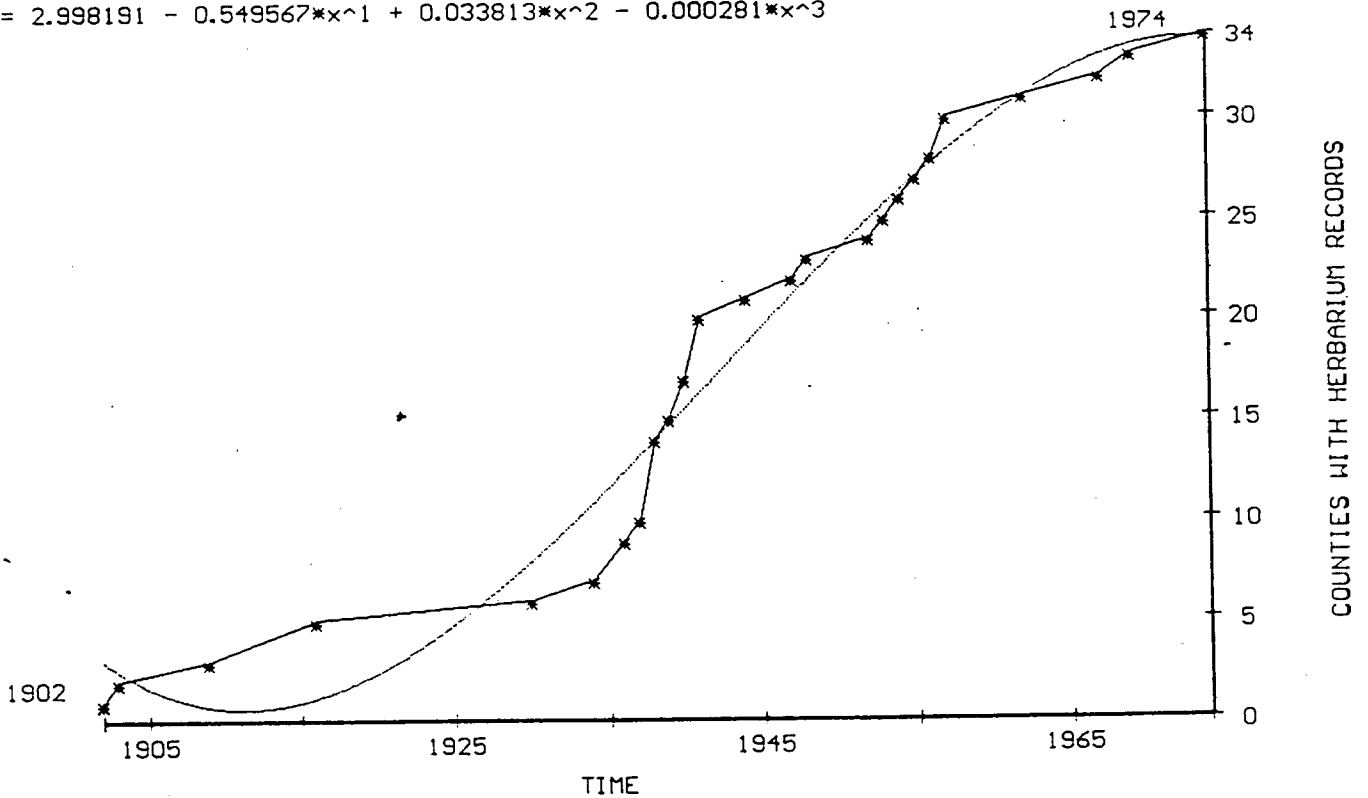


Counties reporting the exotic *Erysimum repandum* (bushy wallflower), 1875-1993.

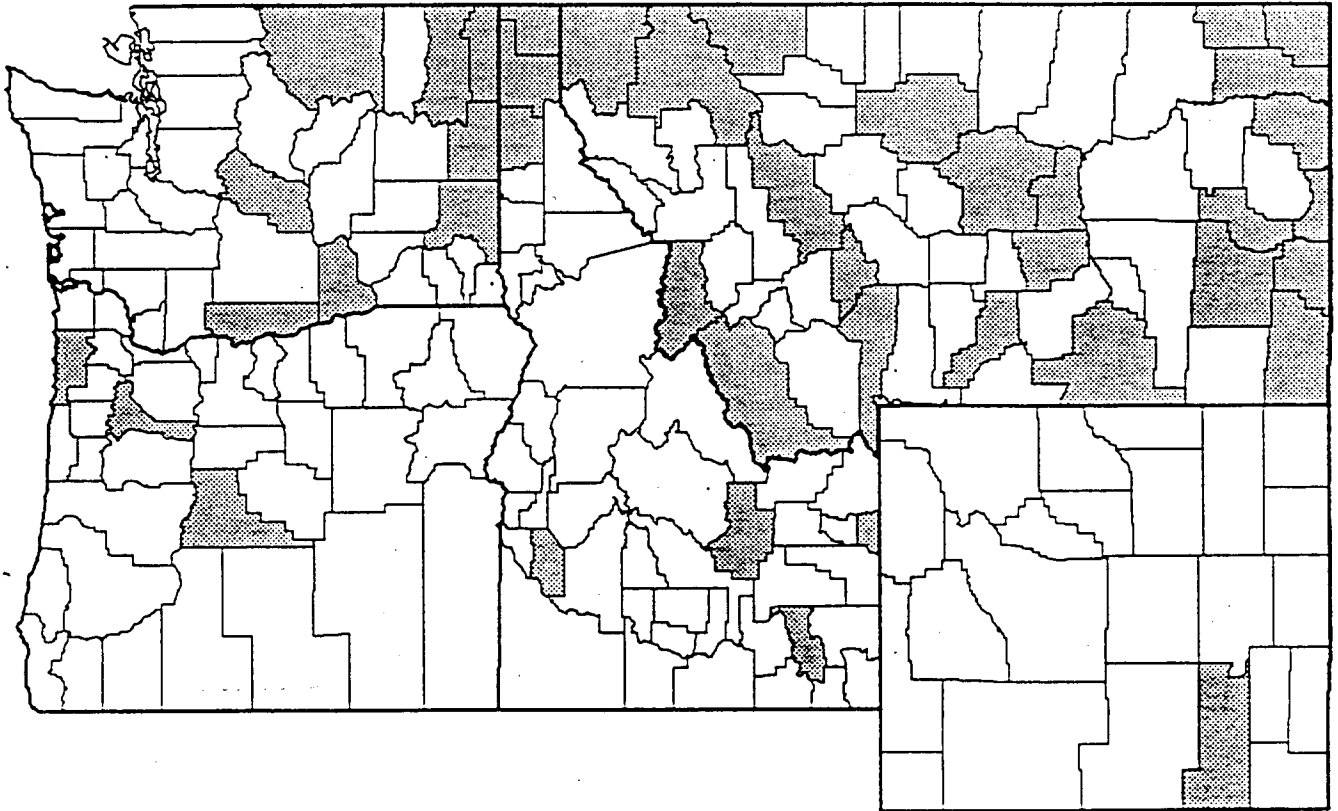


Erysimum repandum INCREASE IN NORTHWEST STATES

$$y = 2.998191 - 0.549567 * x^1 + 0.033813 * x^2 - 0.000281 * x^3$$

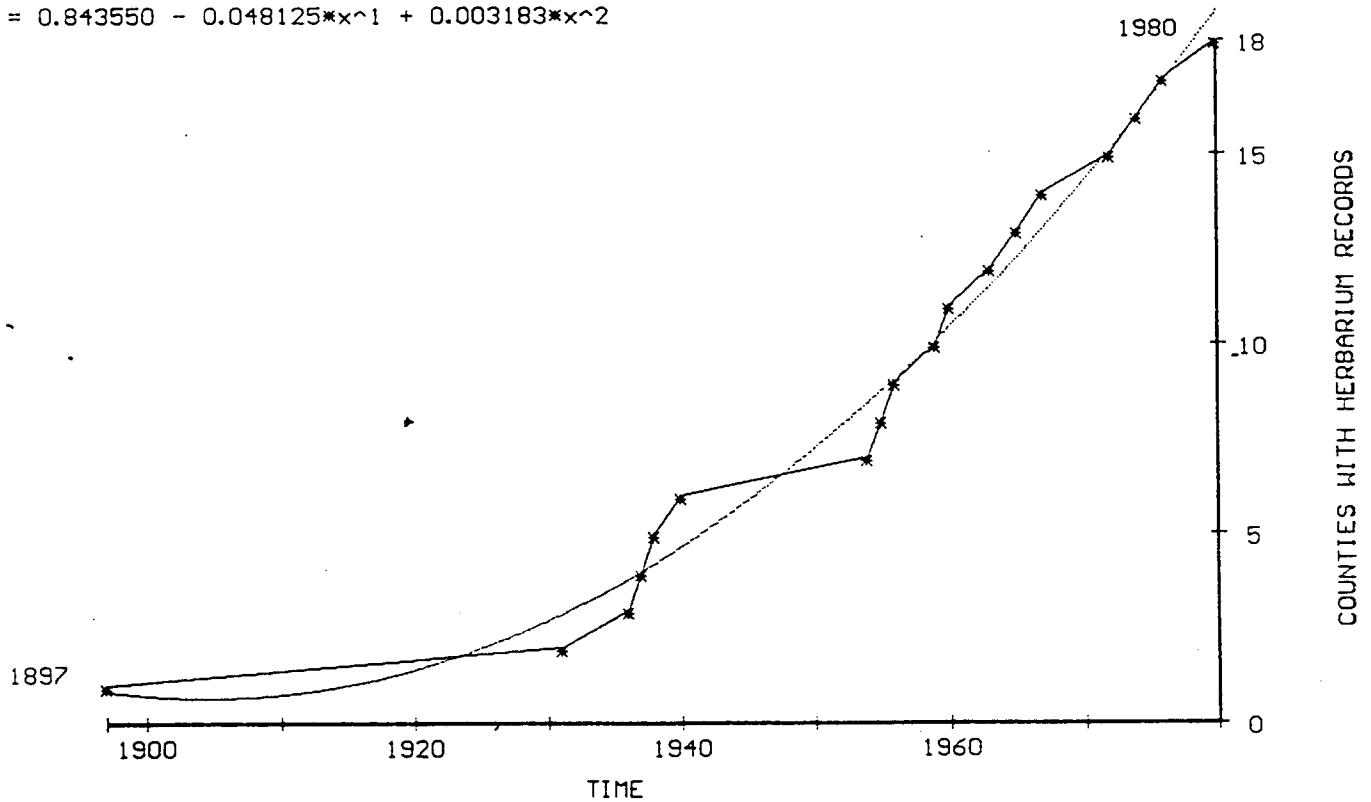


Counties reporting the exotic *Euphorbia cyparissias* (cypress spurge), 1875-1993.

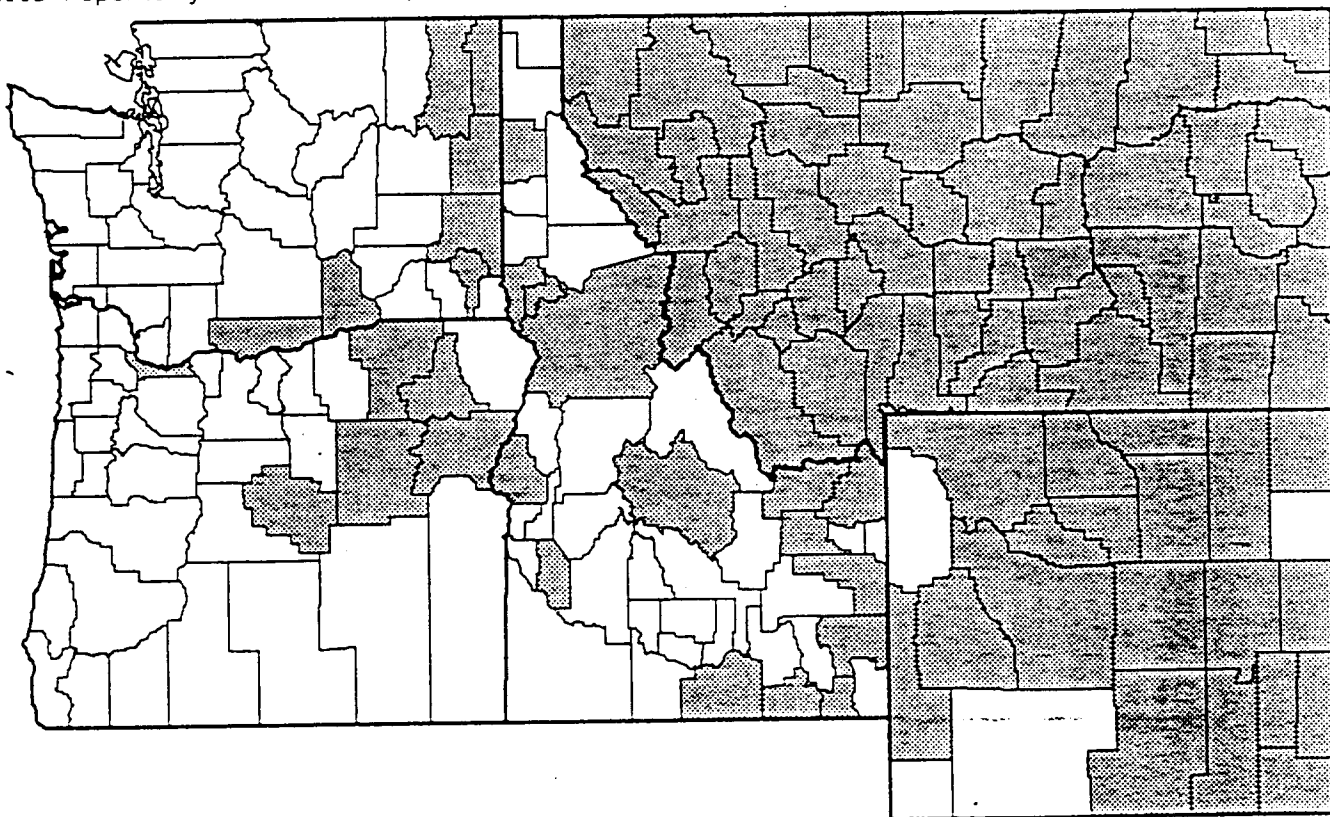


Euphorbia cyparissias INCREASE IN NORTHWEST STATES

$$y = 0.843550 - 0.048125 * x^1 + 0.003183 * x^2$$

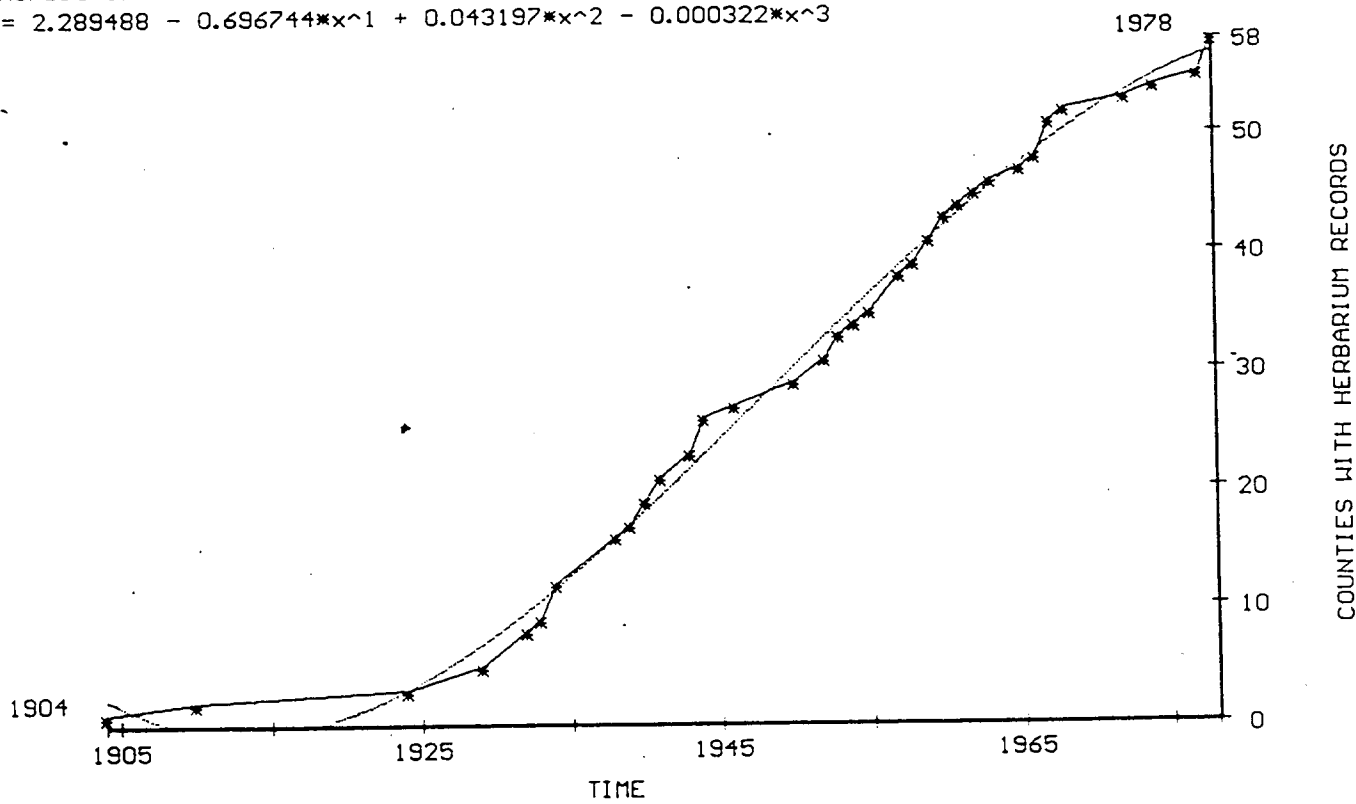


Counties reporting the exotic *Euphorbia esula* (leafy spurge), 1875-1993.

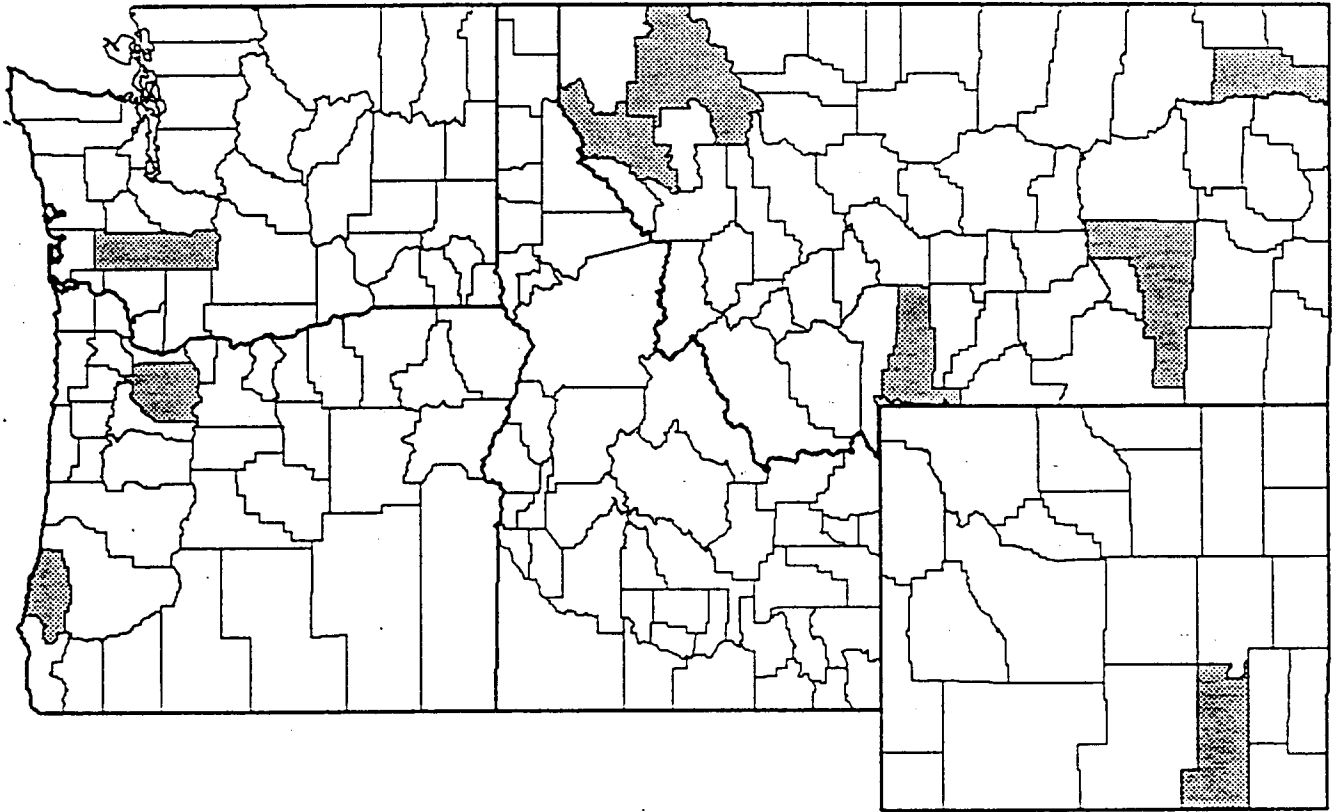


Euphorbia esula INCREASE IN NORTHWEST STATES

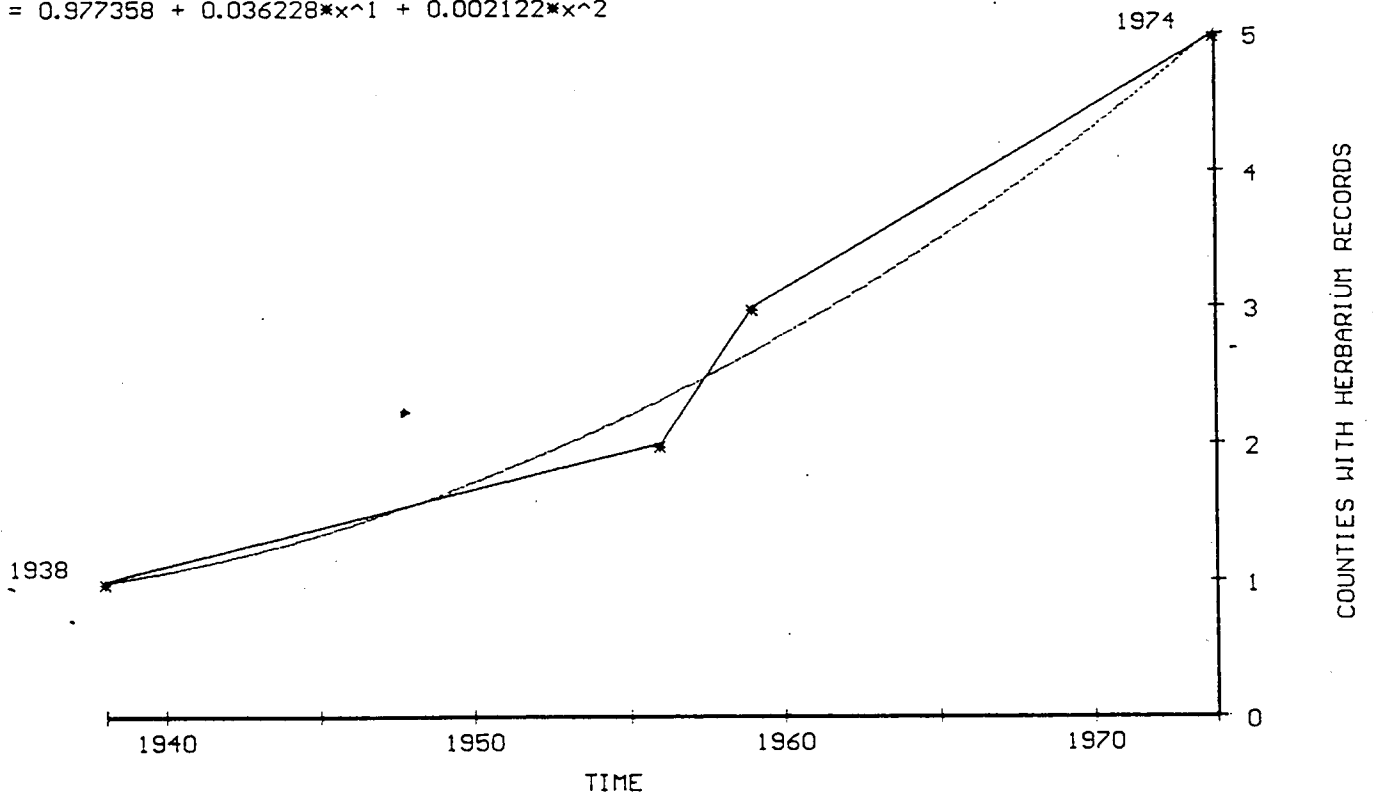
$$y = 2.289488 - 0.696744x^1 + 0.043197x^2 - 0.000322x^3$$



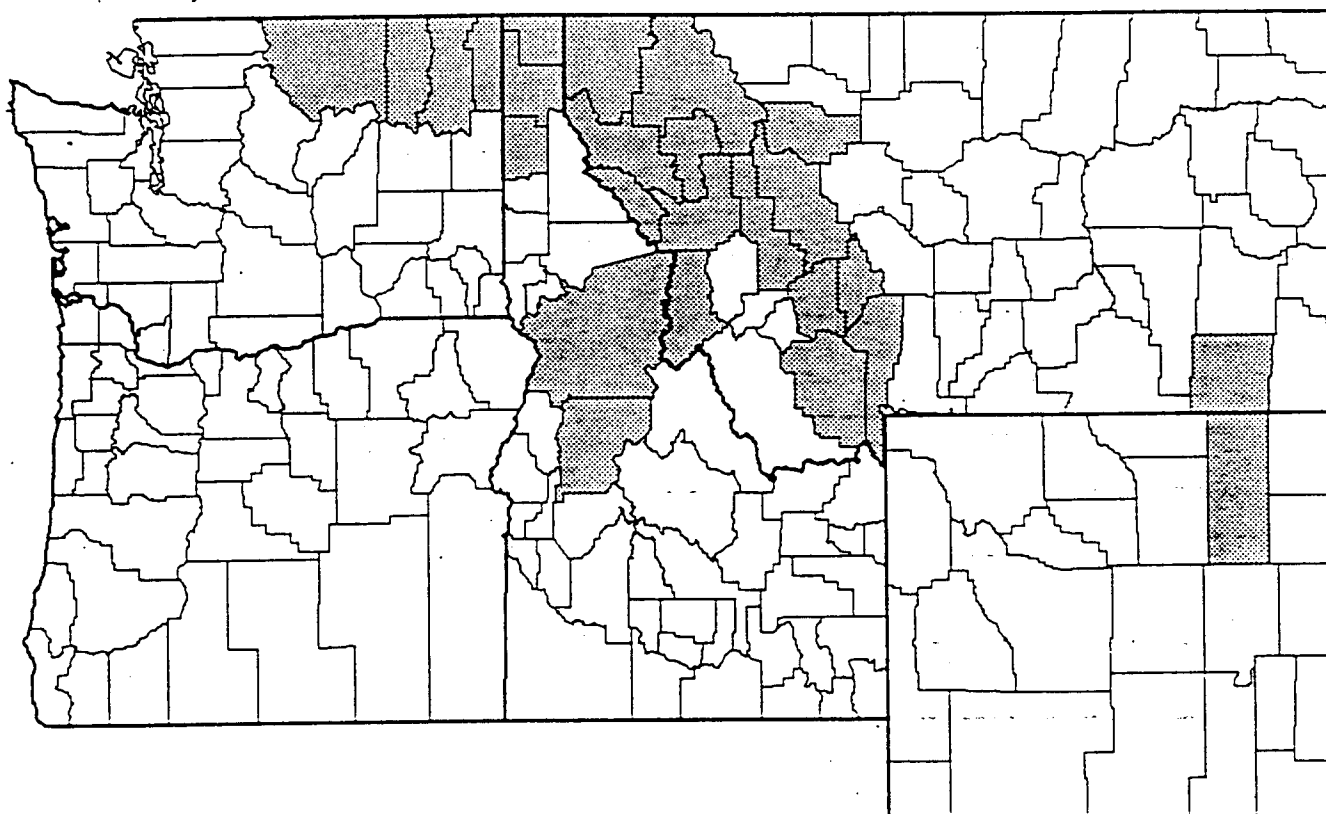
Counties reporting the exotic *Euphorbia helioscopia* (sun spurge), 1875-1990.



Euphorbia helioscopia INCREASE IN NORTHWEST STATES
 $y = 0.977358 + 0.036228 * x^1 + 0.002122 * x^2$

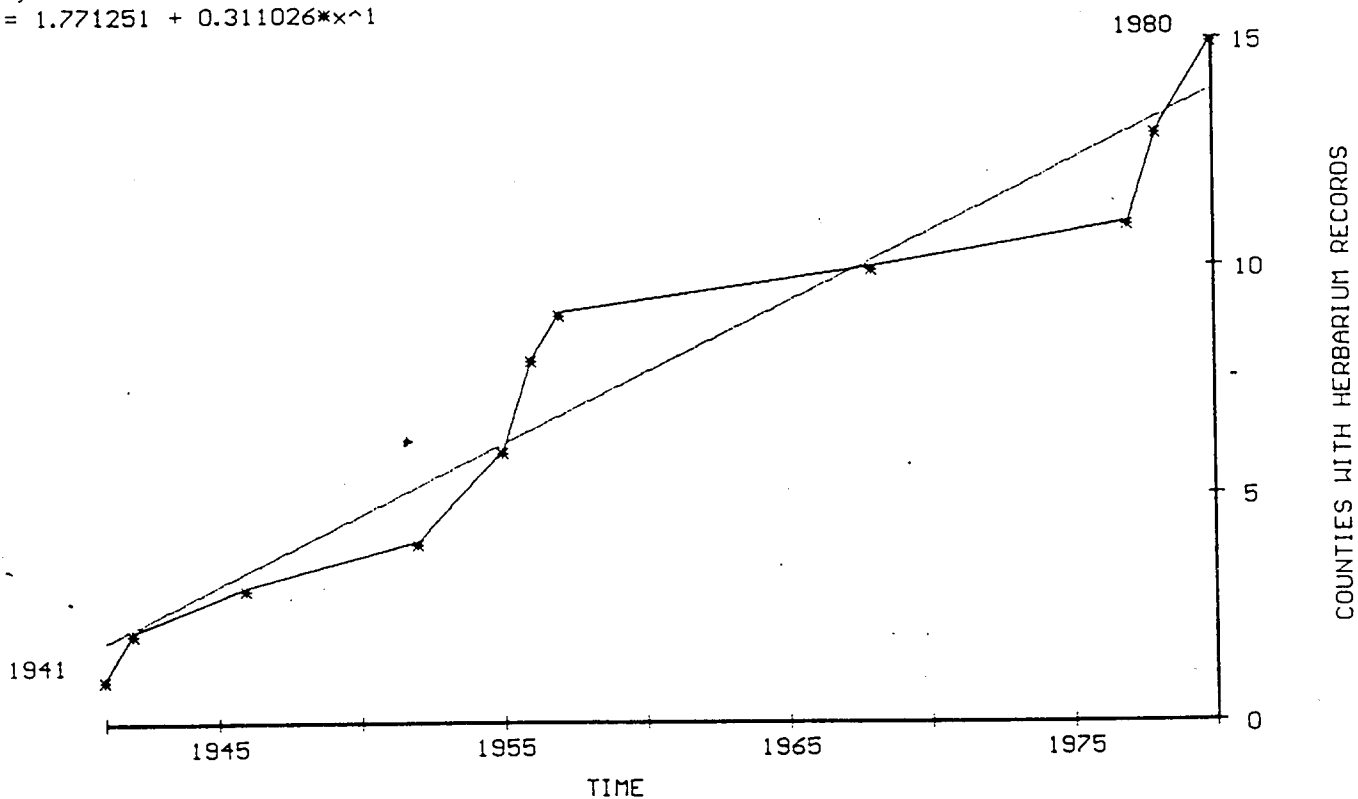


Counties reporting the exotic *Filago arvensis* (field filago), 1875-1993.

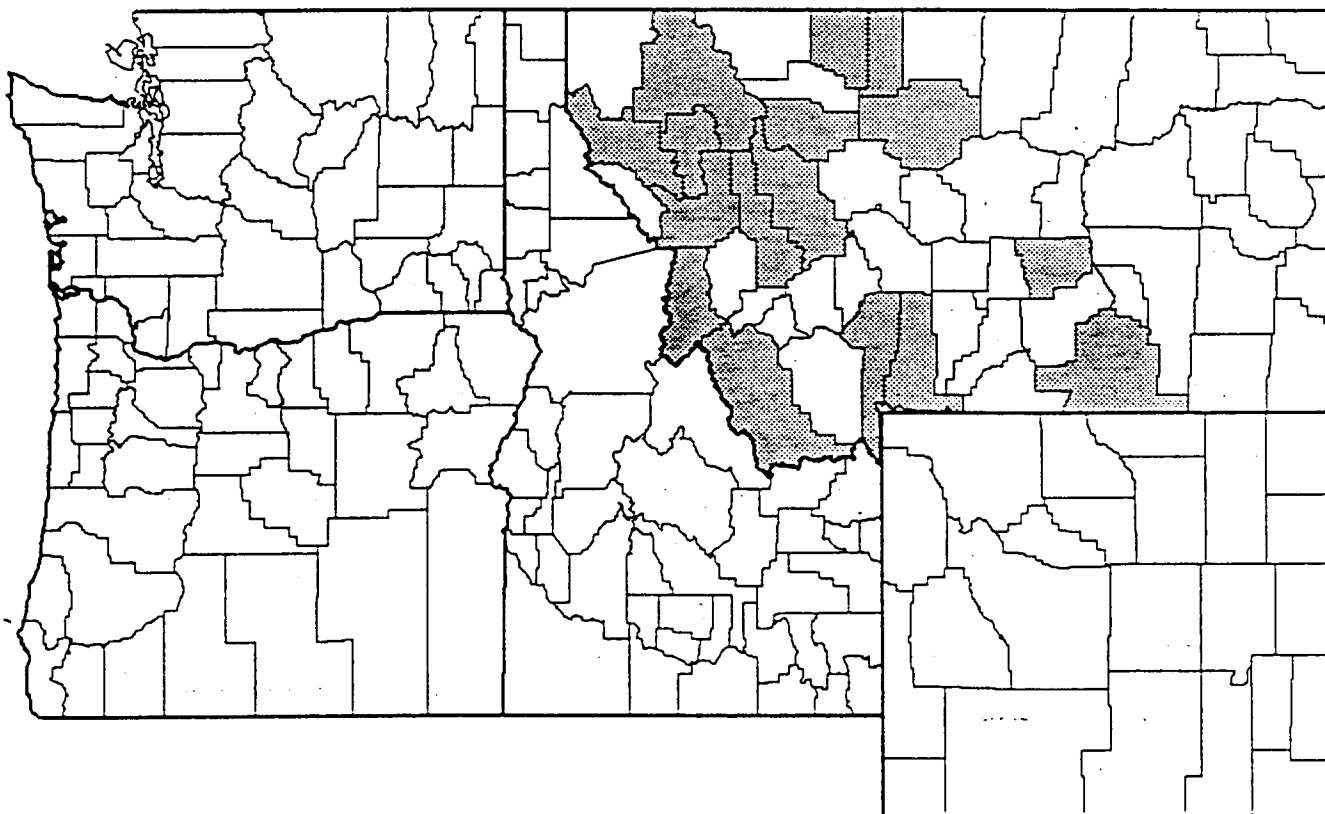


Filago arvensis INCREASE IN NORTHWEST STATES

$$y = 1.771251 + 0.311026 * x^1$$

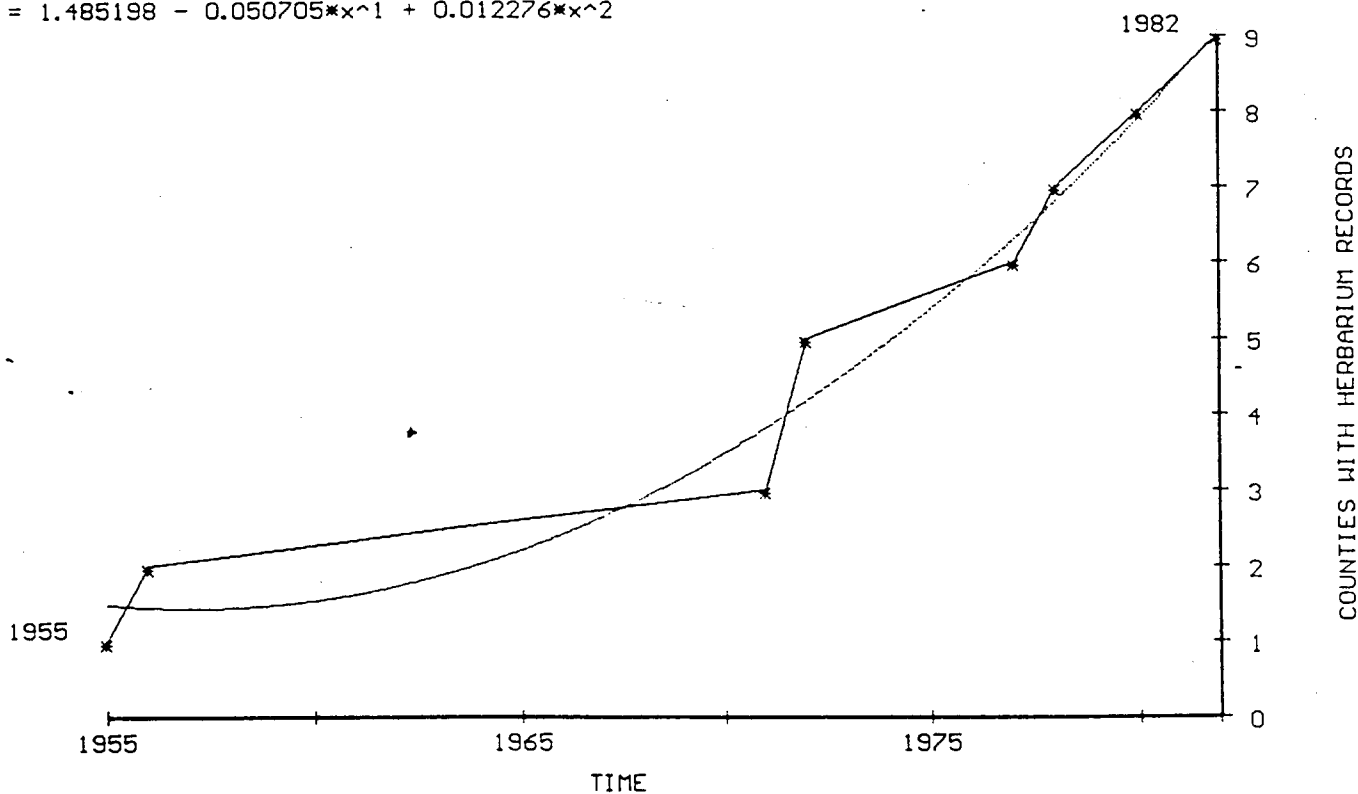


Counties reporting the exotic *Festuca pratensis* (meadow fescue), 1875-1992.

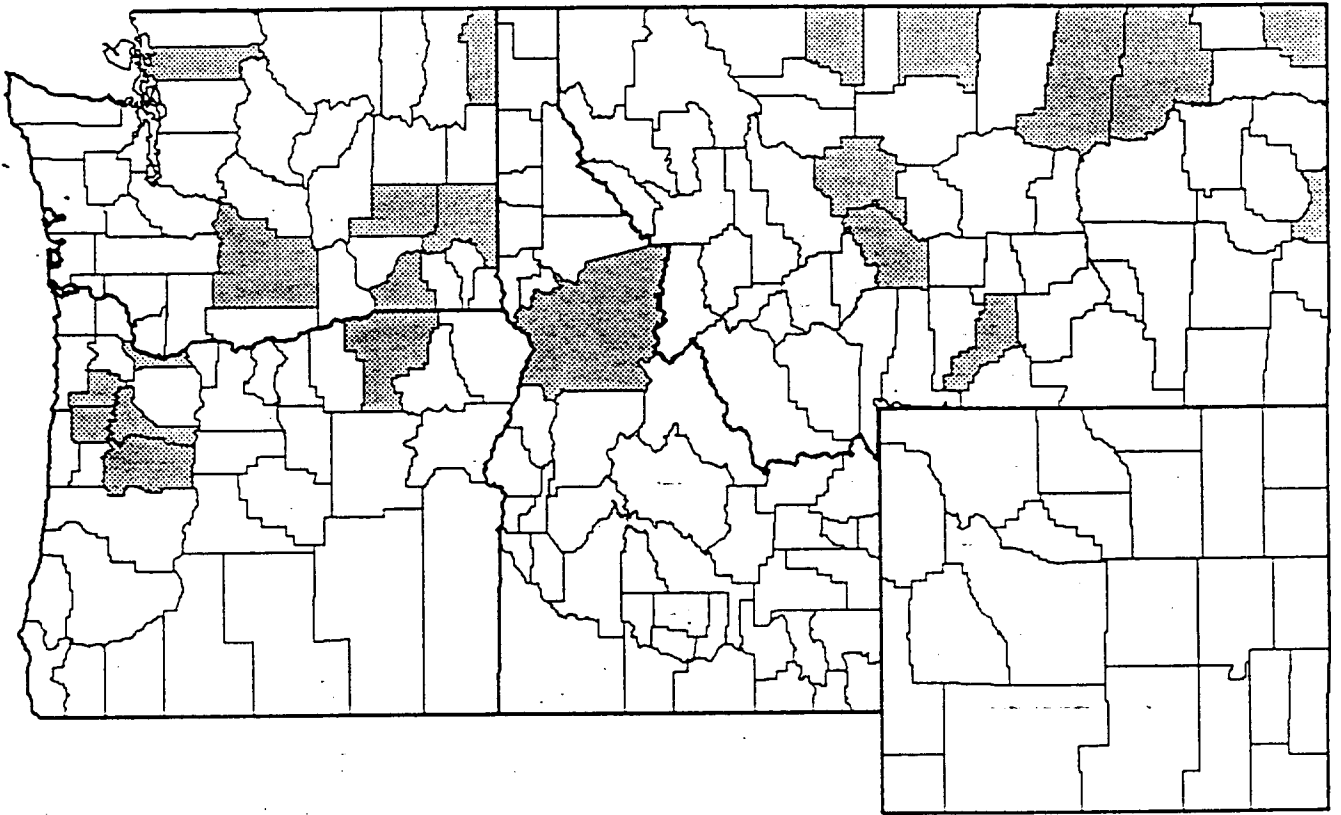


Festuca pratensis INCREASE IN NORTHWEST STATES

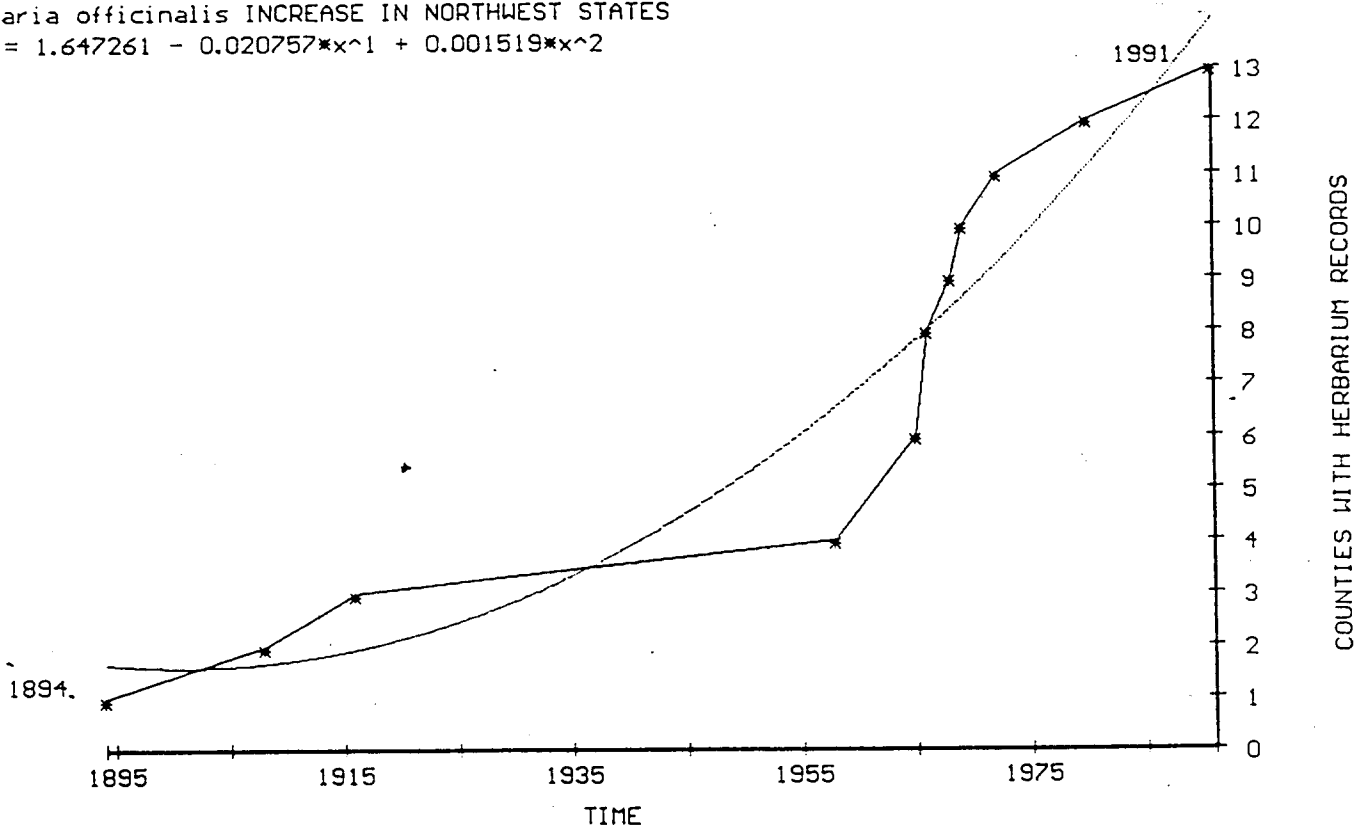
$$y = 1.485198 - 0.050705 * x^1 + 0.012276 * x^2$$



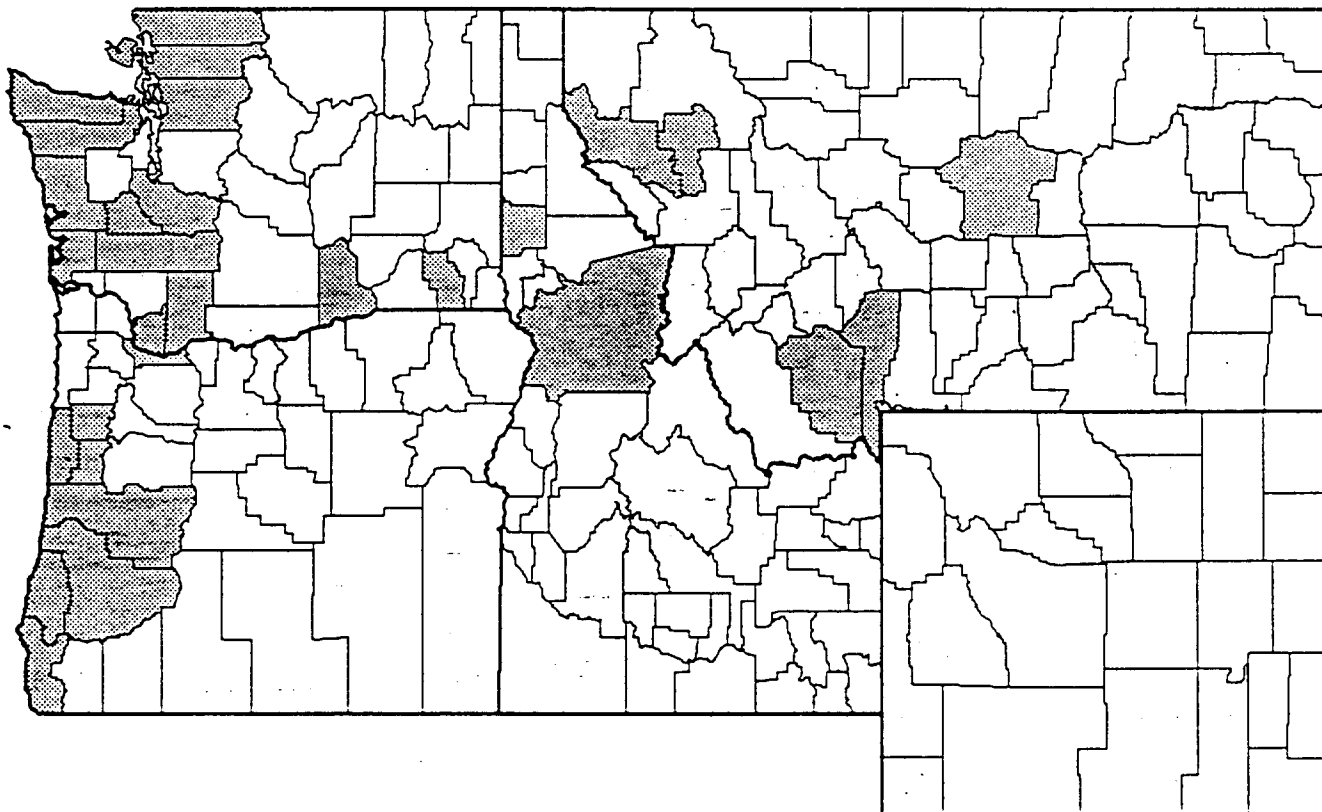
Counties reporting the exotic *Fumaria officinalis* (fumitory), 1875-1992.



Fumaria officinalis INCREASE IN NORTHWEST STATES
 $y = 1.647261 - 0.020757 * x^1 + 0.001519 * x^2$

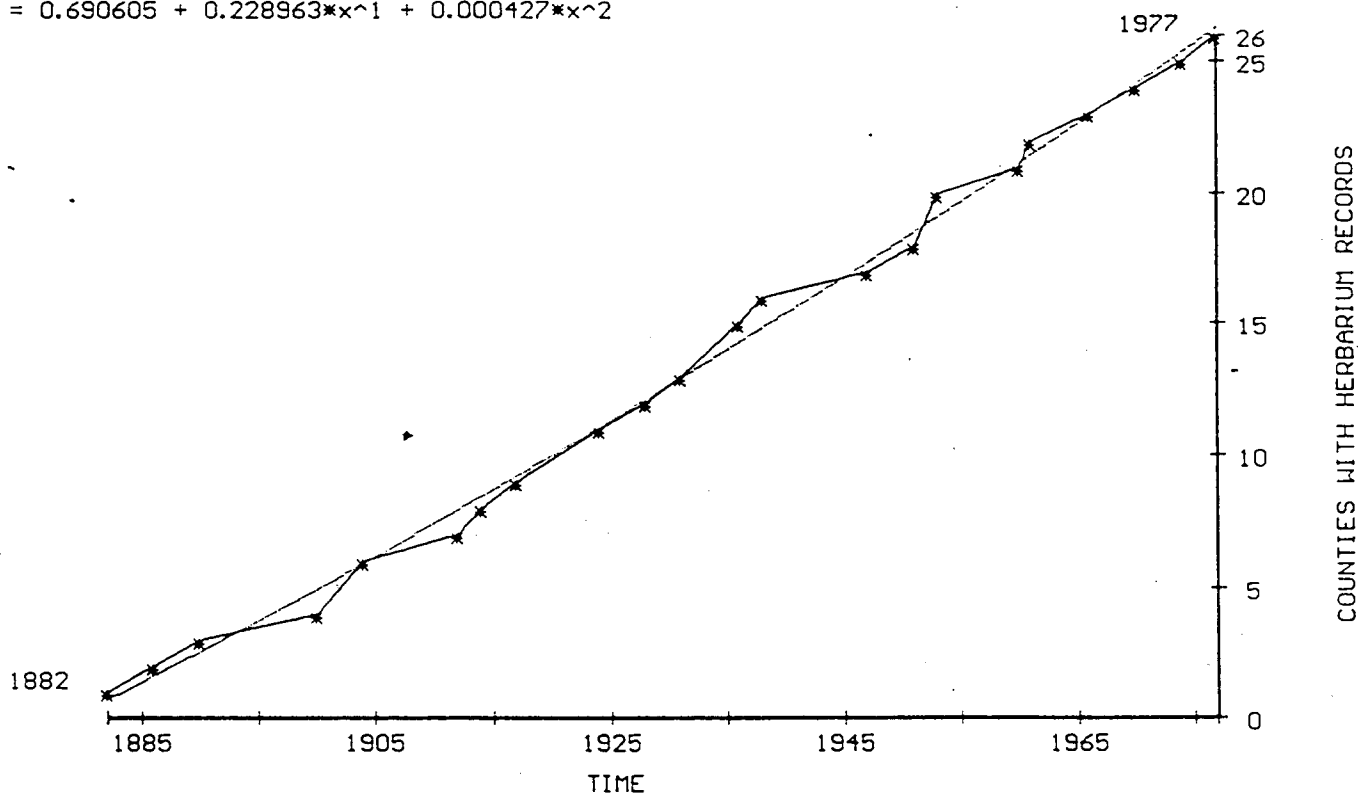


Counties reporting the exotic *Geranium molle* (dovefoot geranium), 1875-1992.

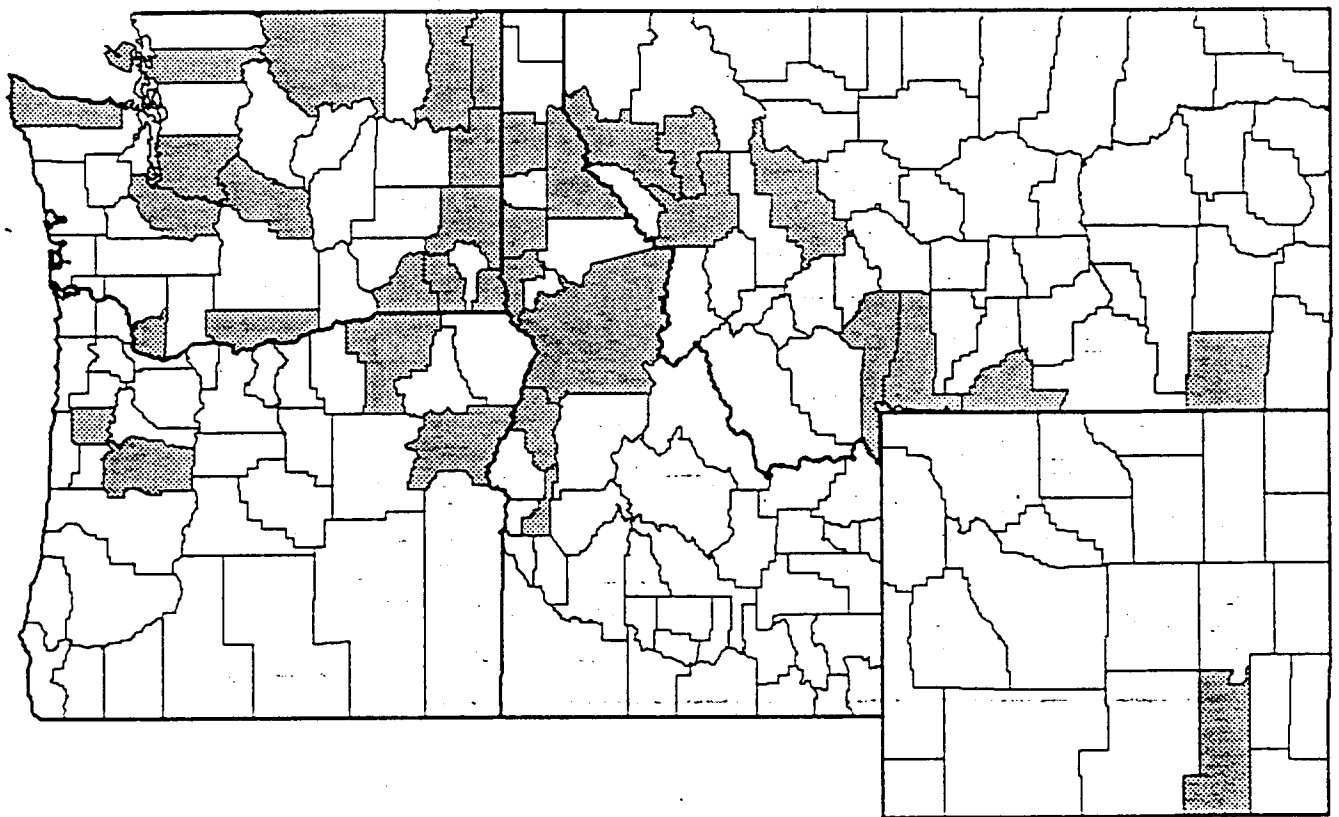


Geranium molle INCREASE IN NORTHWEST STATES

$$y = 0.690605 + 0.228963 \cdot x^1 + 0.000427 \cdot x^2$$

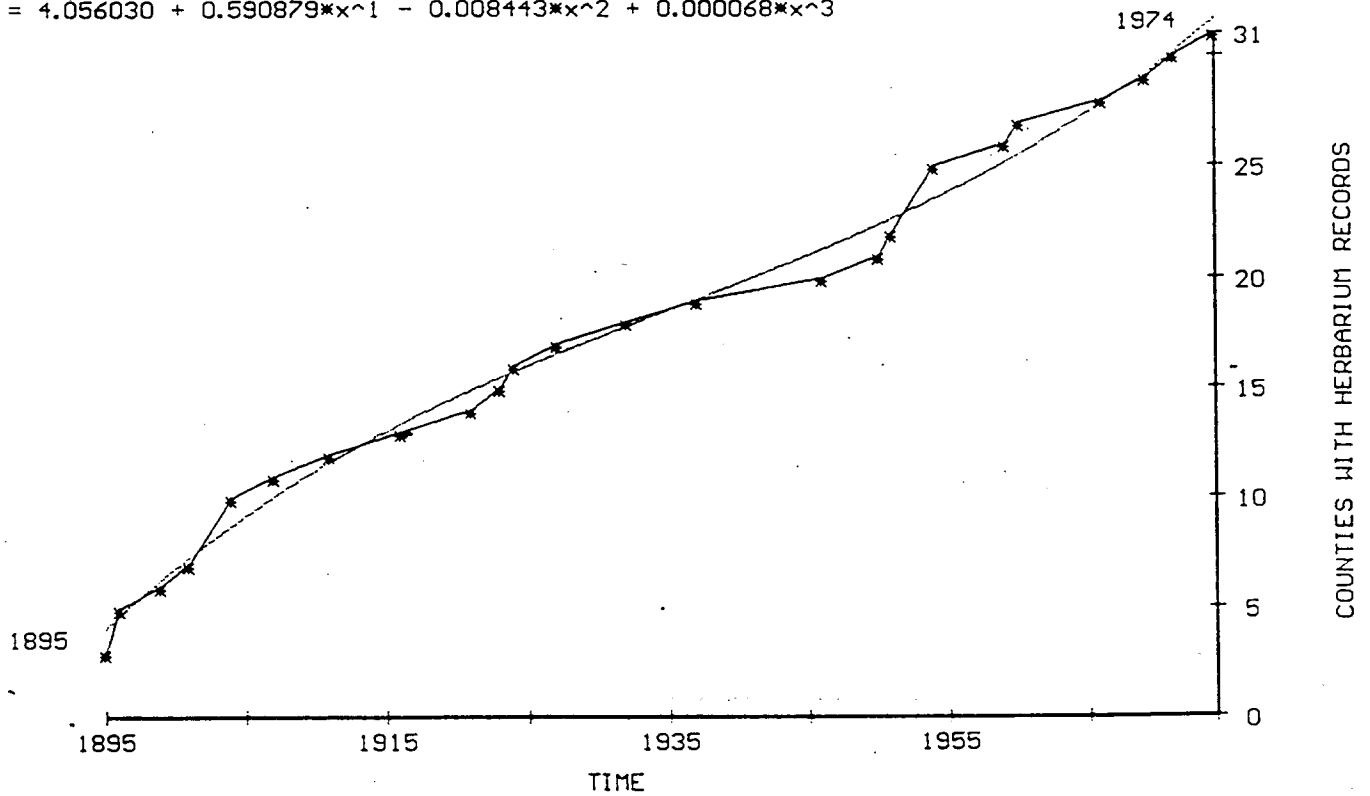


Counties reporting the exotic *Geranium pusillum* (smallflower geranium), 1875-1993.

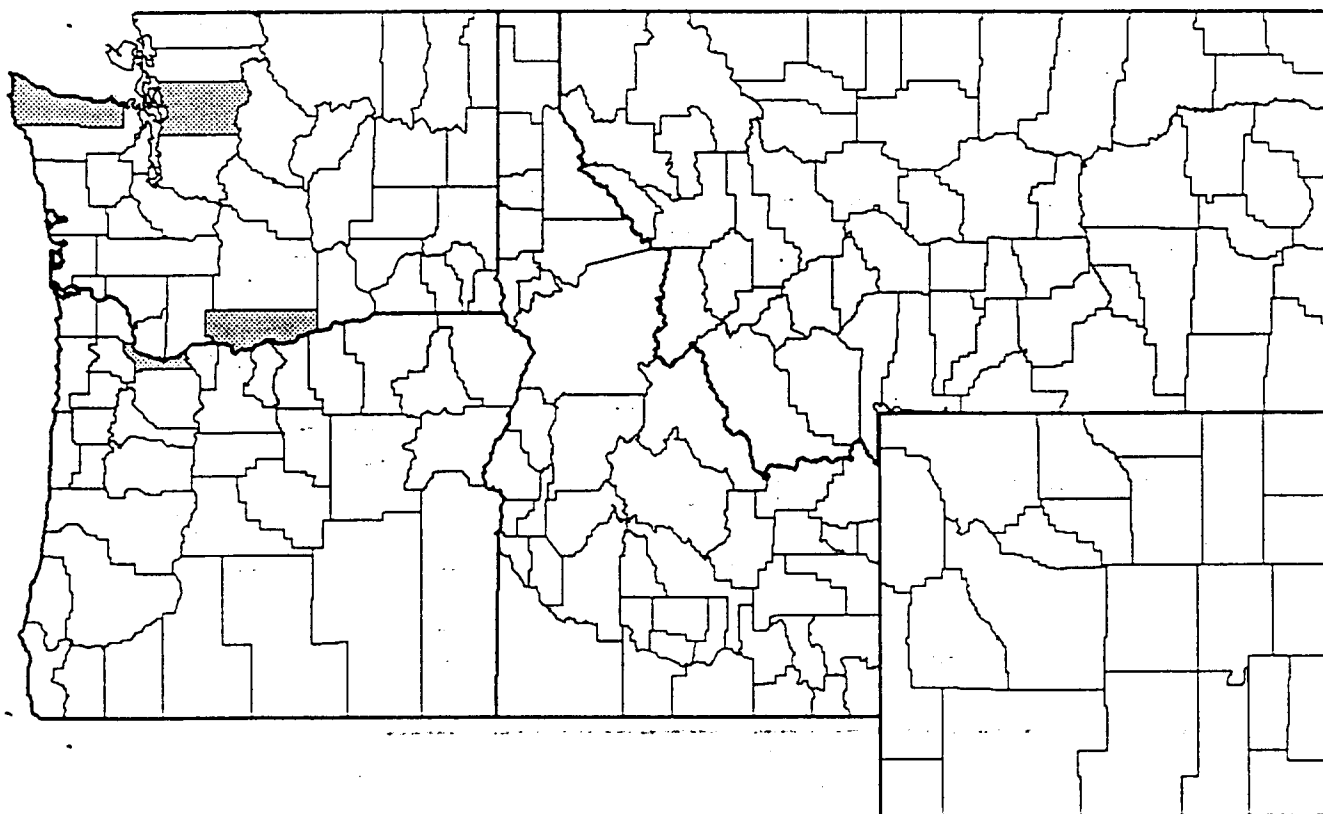


Geranium pusillum INCREASE IN NORTHWEST STATES

$$y = 4.056030 + 0.590879 * x^1 - 0.008443 * x^2 + 0.000068 * x^3$$

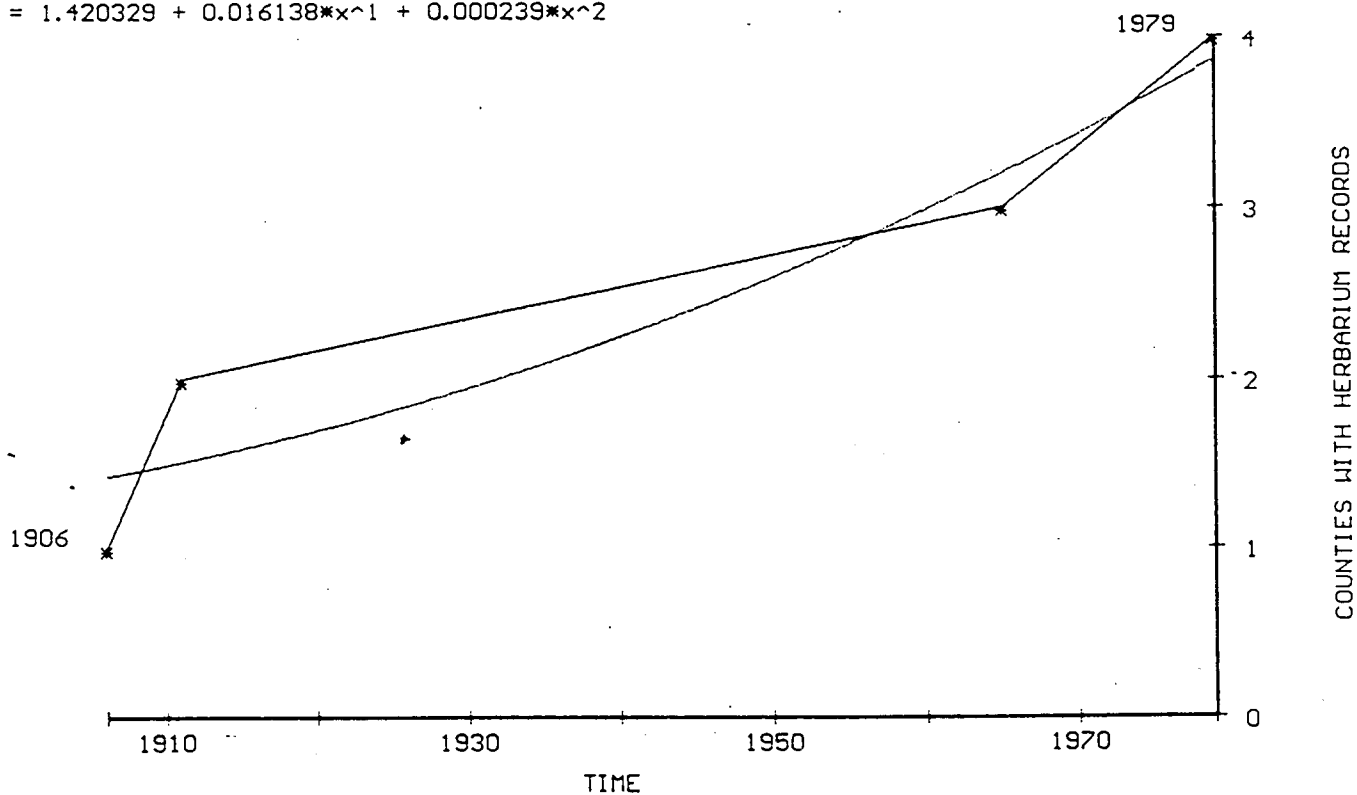


Counties reporting the exotic *Geranium robertianum* (herb robert), 1875-1979.

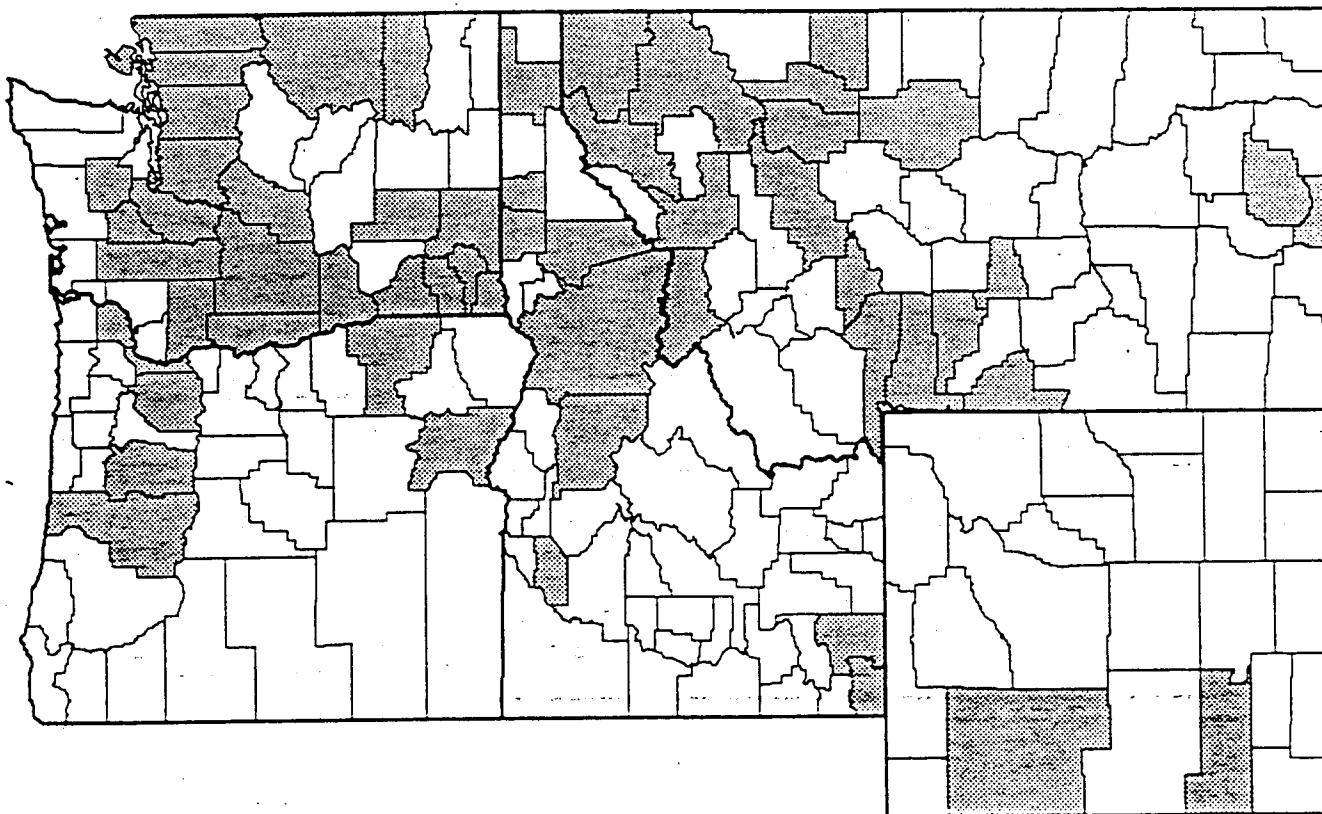


Geranium robertianum INCREASE IN NORTHWEST STATES

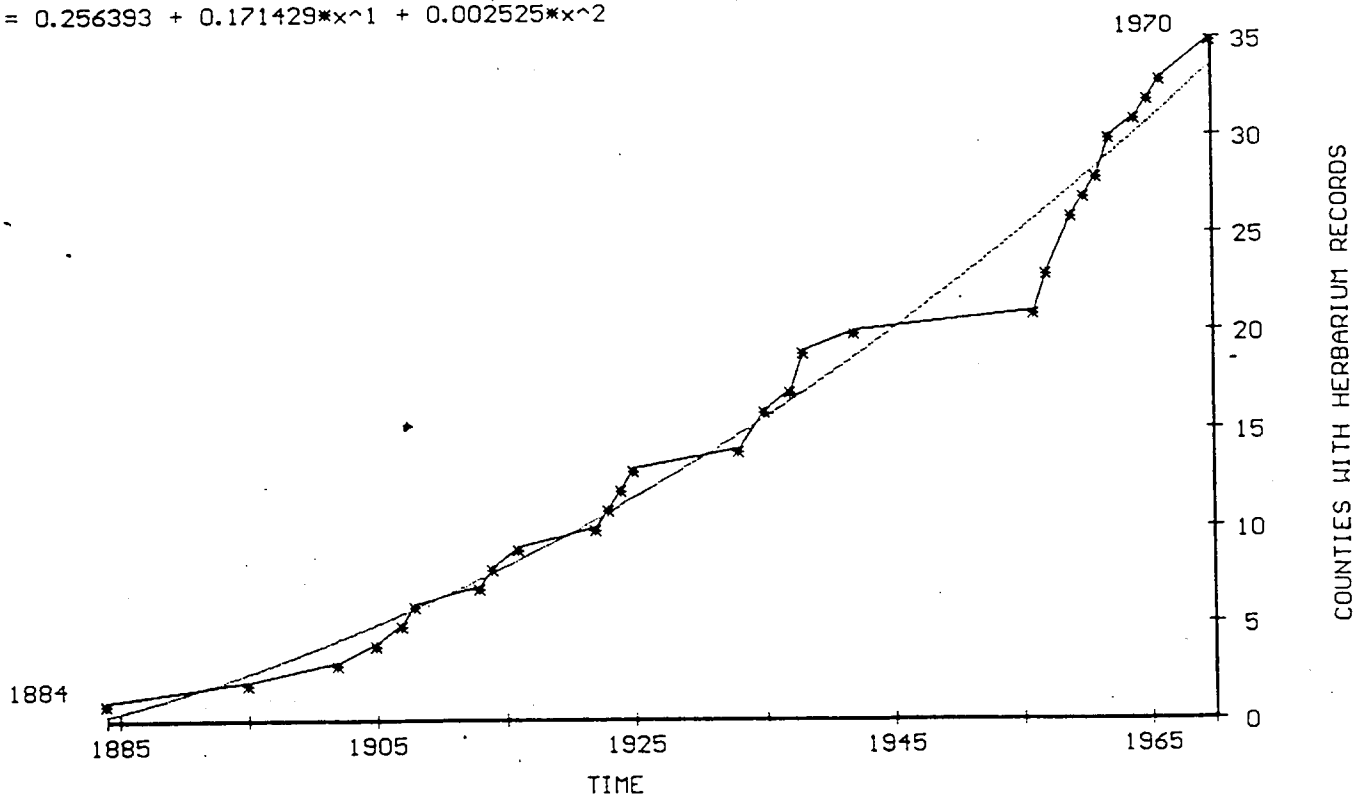
$$y = 1.420329 + 0.016138 * x^1 + 0.000239 * x^2$$



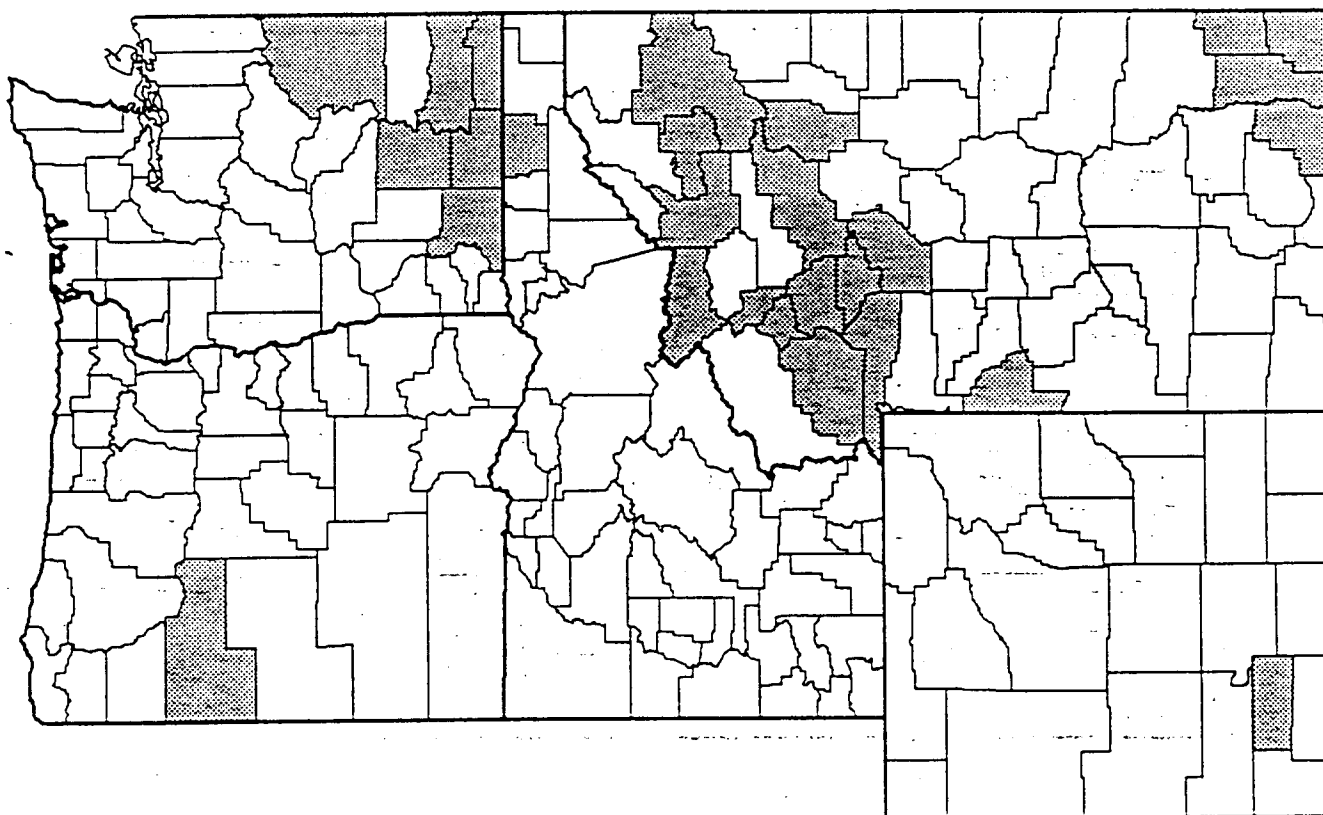
Counties reporting the exotic *Glechoma hederacea* (ground ivy), 1875-1994.



Glechoma hederacea INCREASE IN NORTHWEST STATES
 $y = 0.256393 + 0.171429 * x^1 + 0.002525 * x^2$

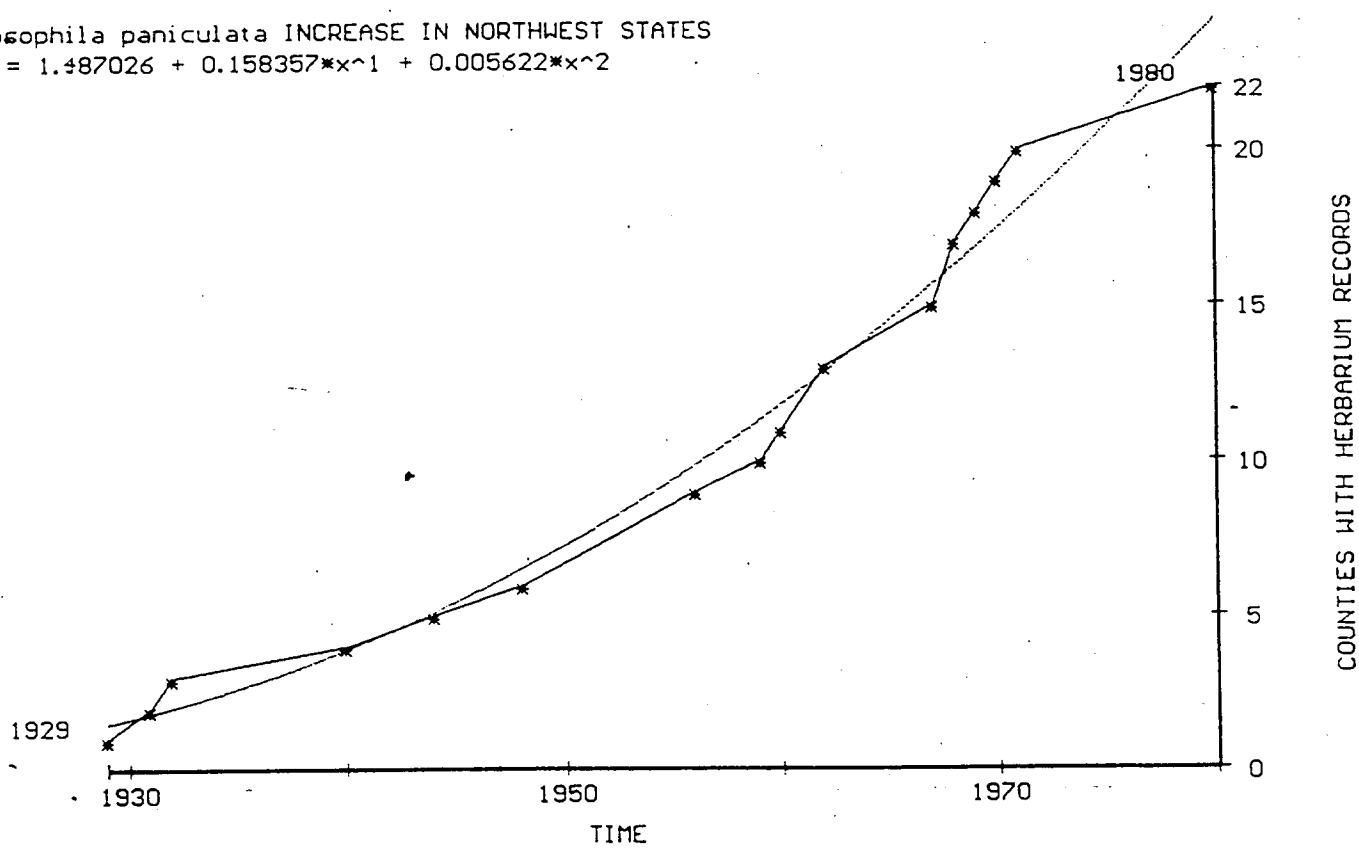


Counties reporting the exotic *Gypsophila paniculata* (babysbreath), 1875-1992.

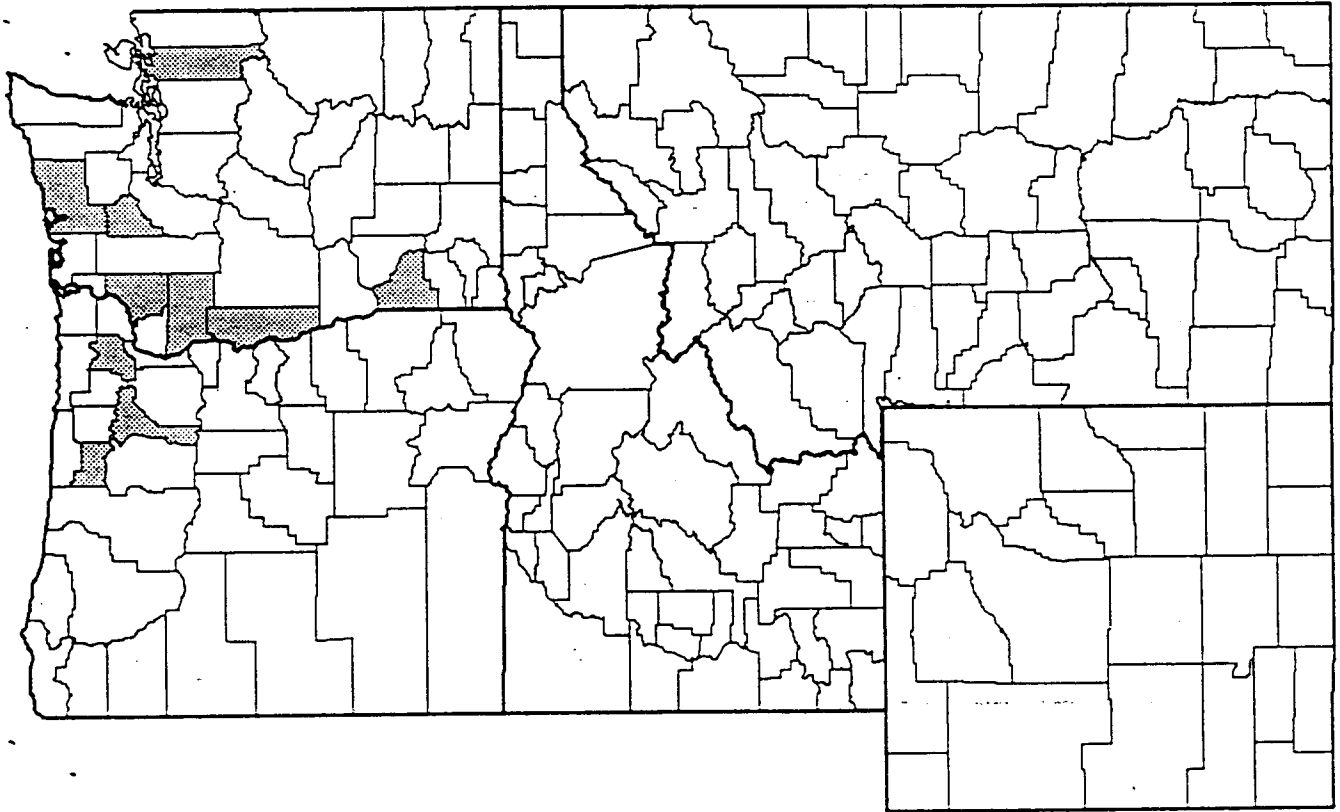


Gypsophila paniculata INCREASE IN NORTHWEST STATES

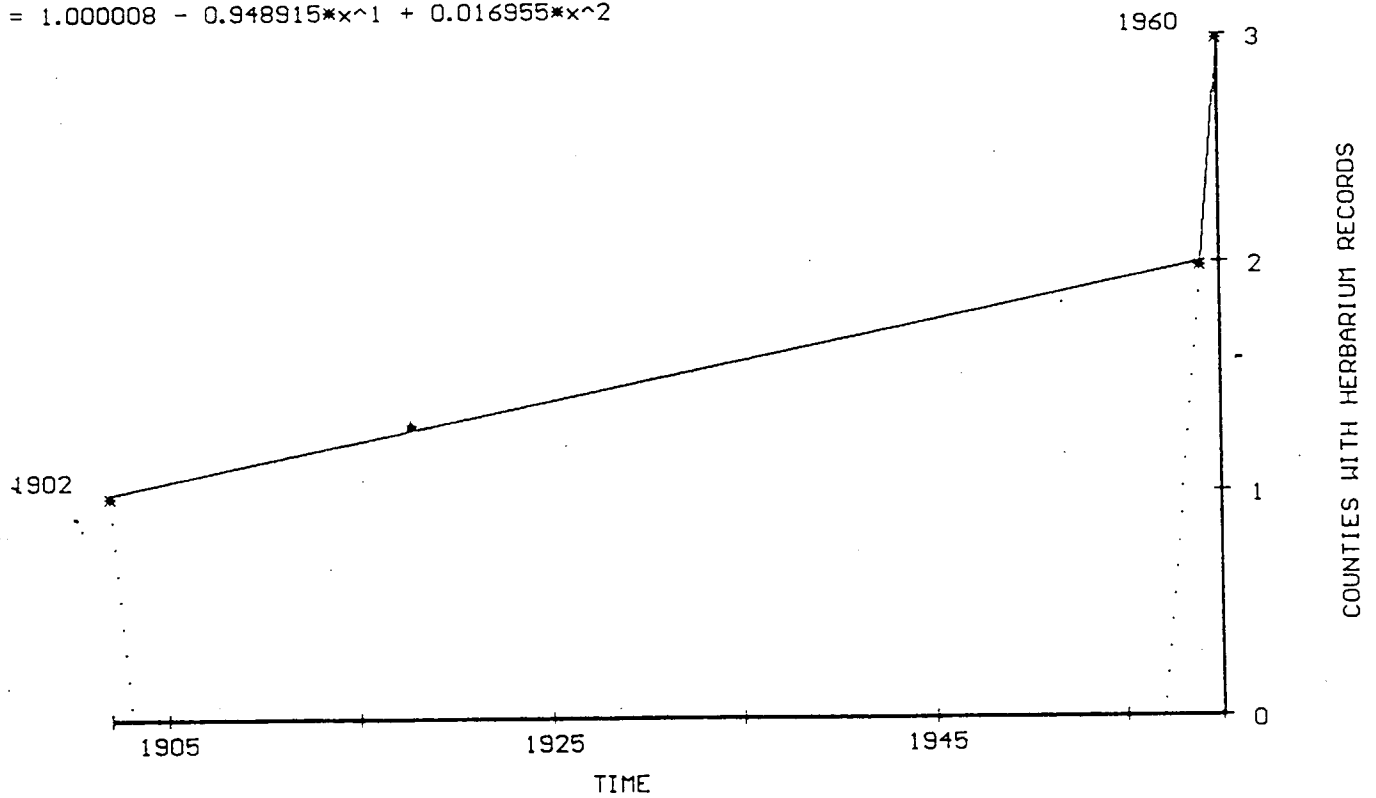
$$y = 1.487026 + 0.158357 * x^1 + 0.005622 * x^2$$



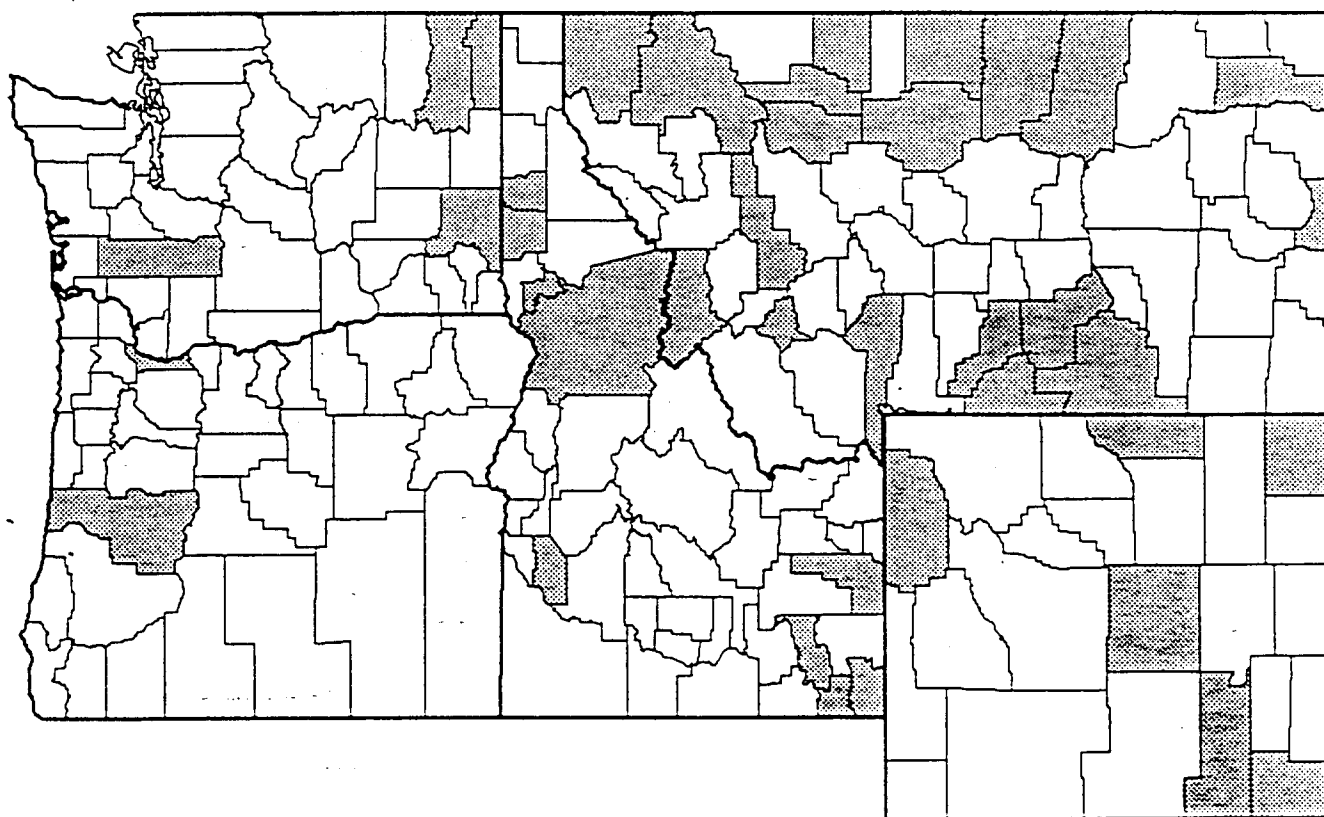
Counties reporting the exotic *Hedera helix* (English ivy), 1875-1990.



Hedera helix INCREASE IN NORTHWEST STATES
 $y = 1.000008 - 0.948915 * x^1 + 0.016955 * x^2$

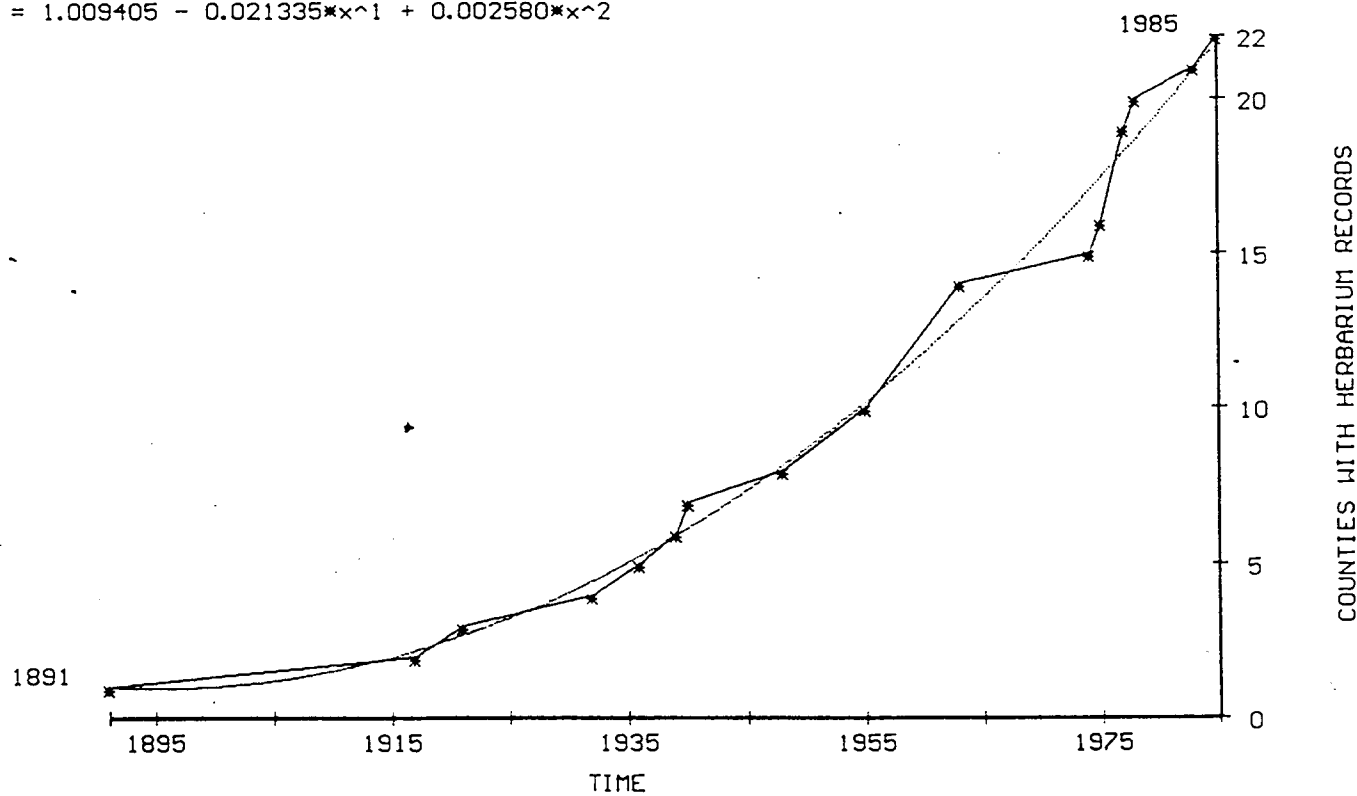


Counties reporting the exotic *Hesperis matronalis* (damesrocket), 1875-1994.

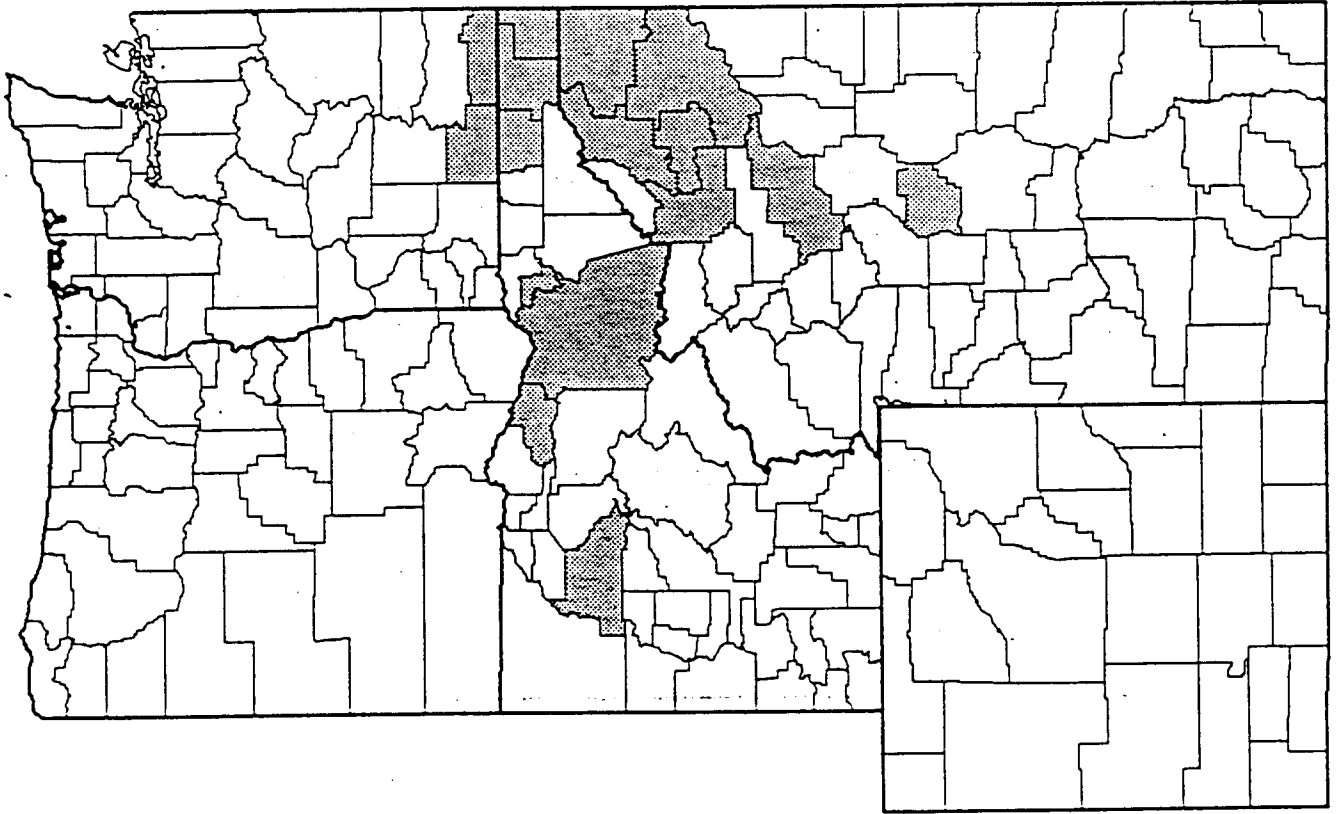


Hesperis matronalis INCREASE IN NORTHWEST STATES

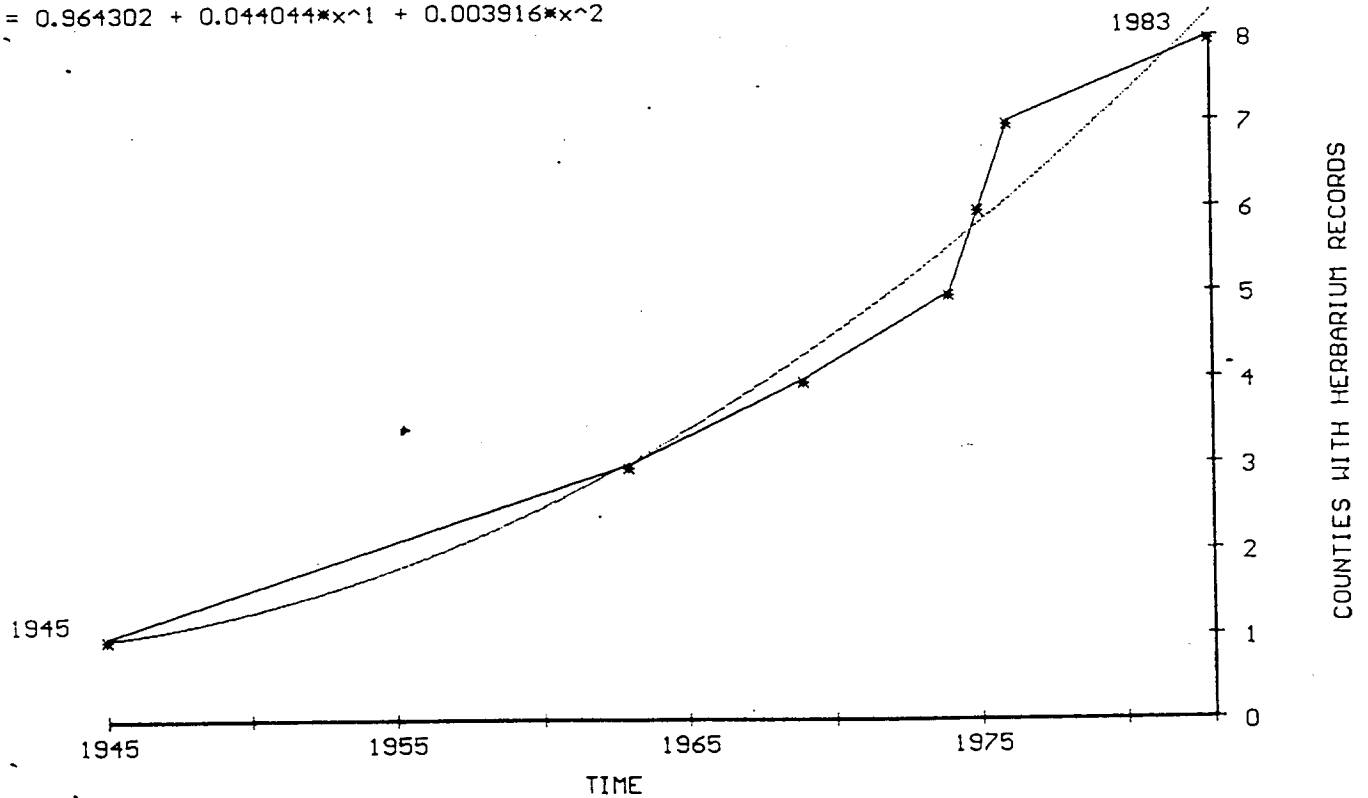
$$y = 1.009405 - 0.021335 \times x^1 + 0.002580 \times x^2$$



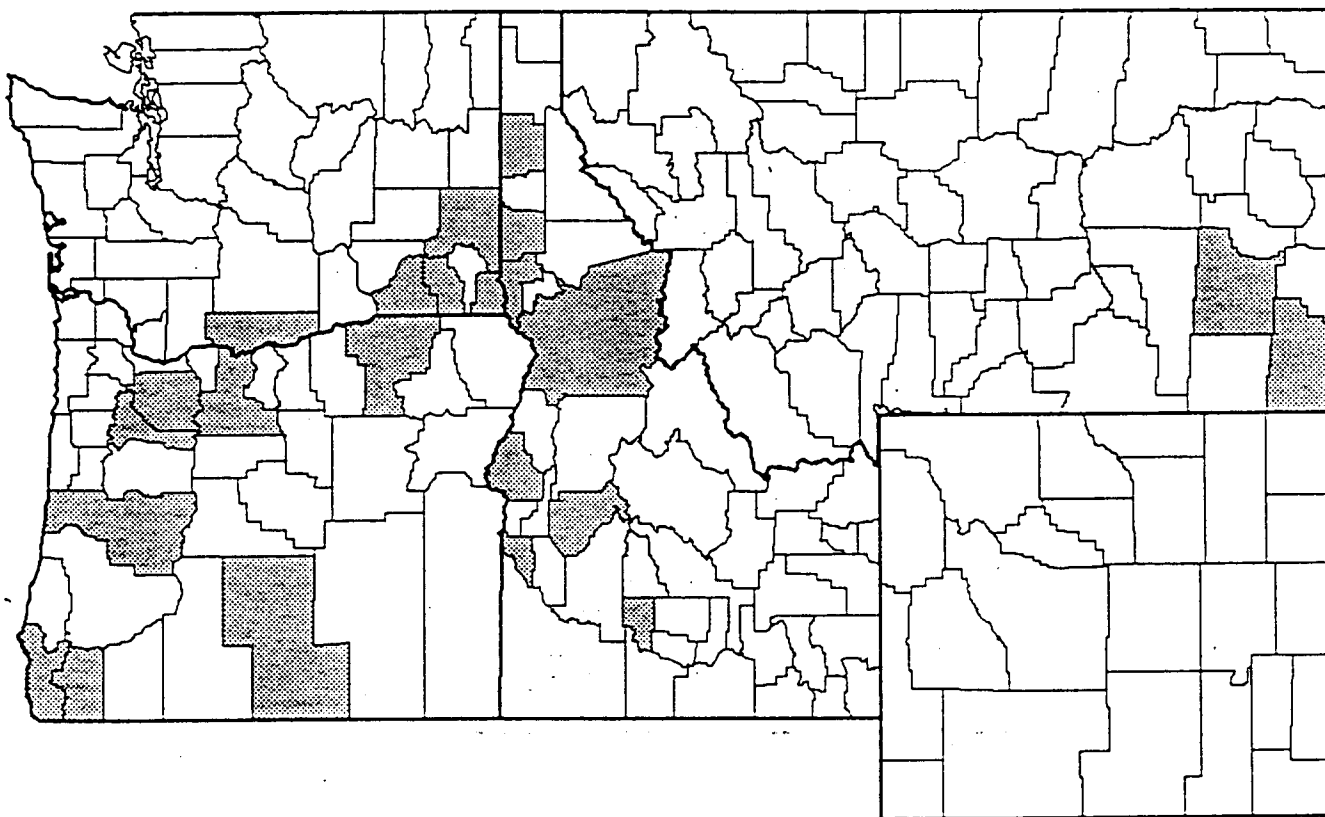
Counties reporting the exotic *Hieracium aurantiacum* (orange hawkweed), 1875-1993.



Hieracium aurantiacum INCREASE IN NORTHWEST STATES
 $y = 0.964302 + 0.044044x^1 + 0.003916x^2$

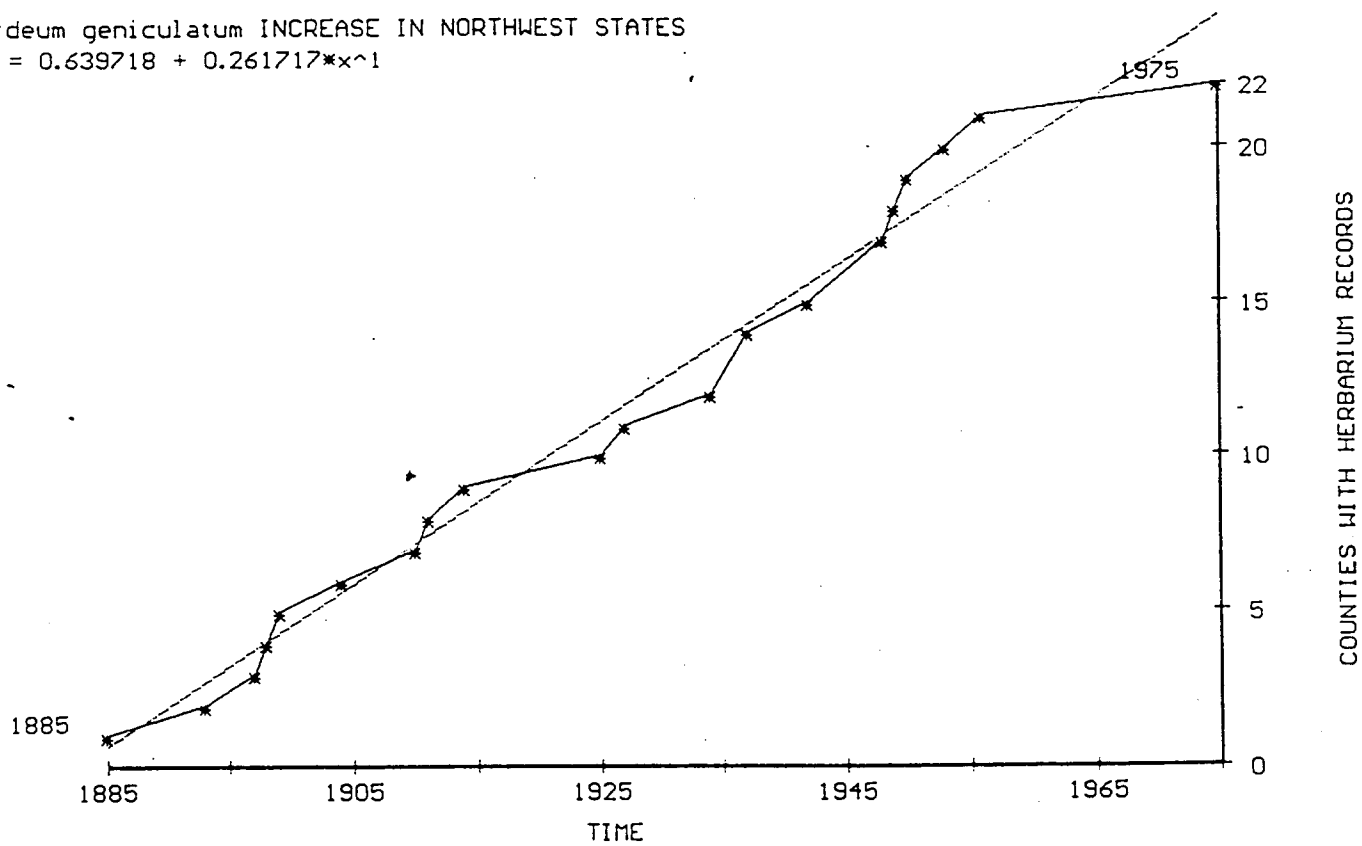


Counties reporting the exotic *Hordeum geniculatum* (Mediterranean barley), 1875-1990.

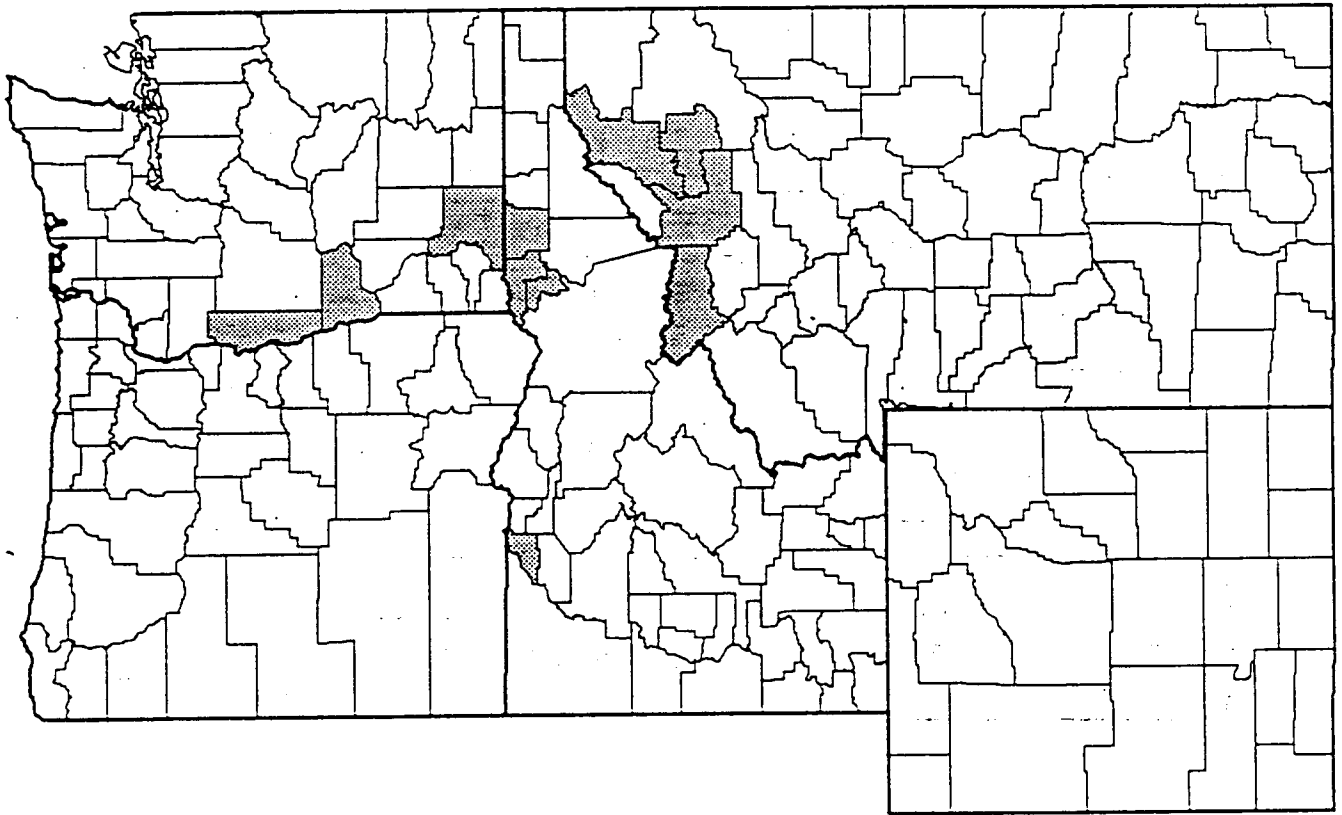


Hordeum geniculatum INCREASE IN NORTHWEST STATES

$$y = 0.639718 + 0.261717 * x^1$$

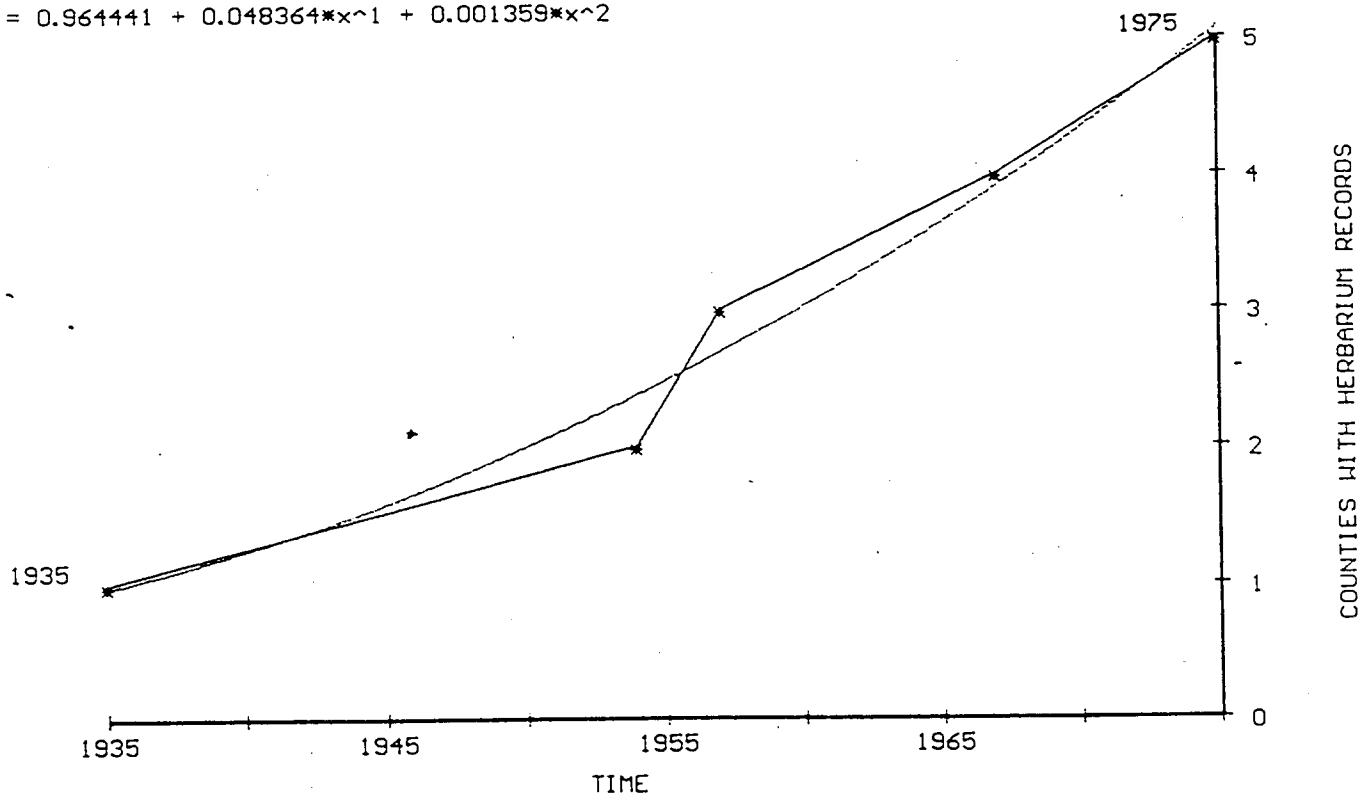


Counties reporting the exotic *Holosteum umbellatum* (umbrella spurry), 1875-1994.

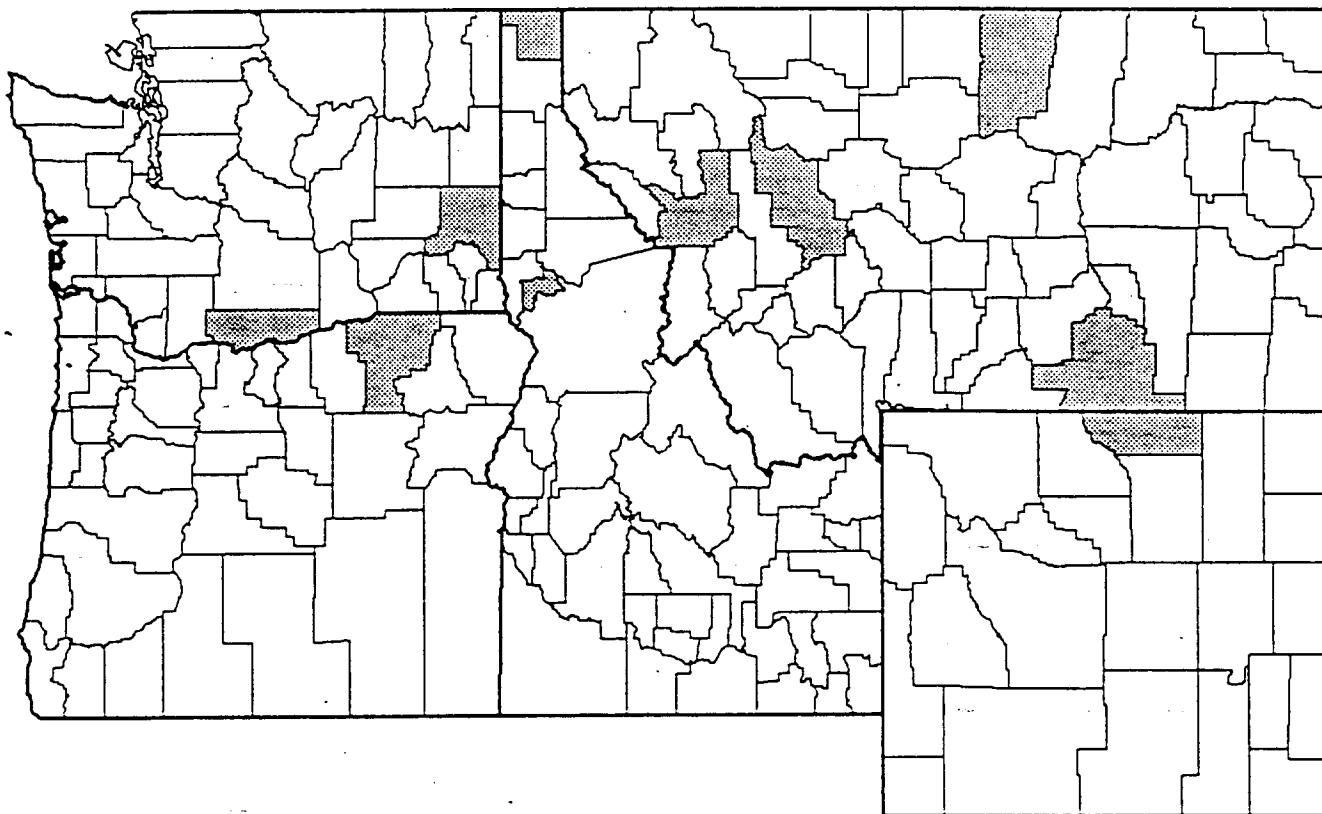


Holosteum umbellatum INCREASE IN NORTHWEST STATES

$$y = 0.964441 + 0.048364 * x^1 + 0.001359 * x^2$$

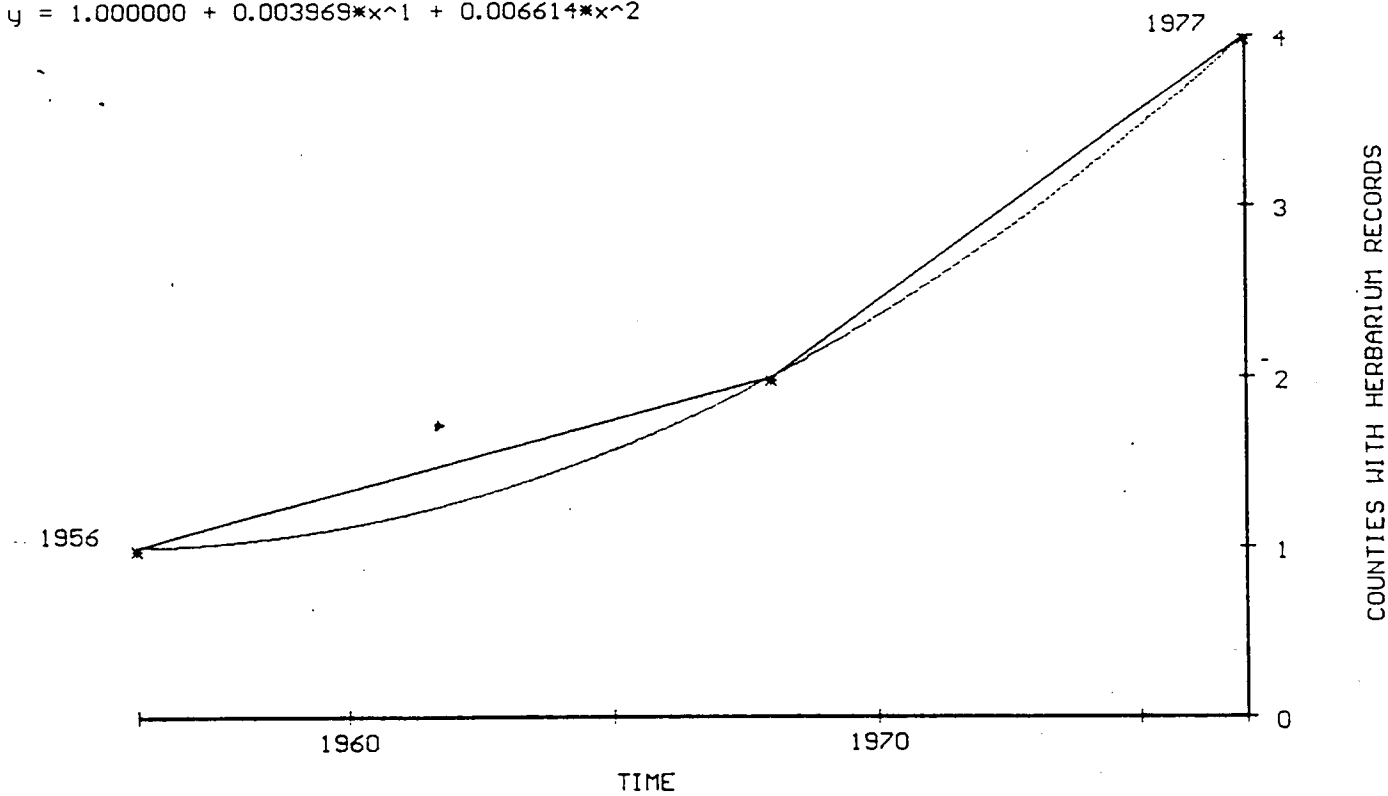


Counties reporting the exotic *Hordeum vulgare* (barley), 1875-1993.

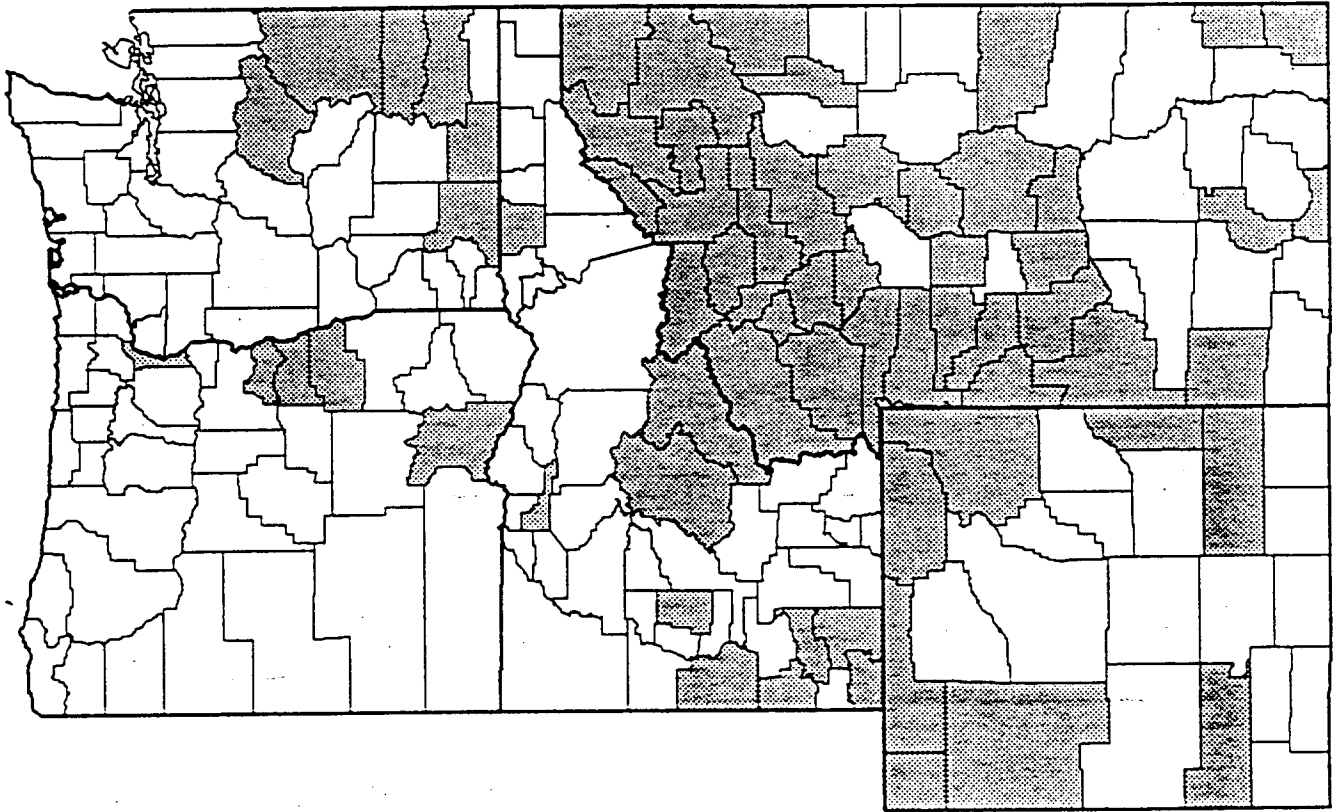


Hordeum vulgare INCREASE IN NORTHWEST STATES

$$y = 1.000000 + 0.003969 * x^1 + 0.006614 * x^2$$

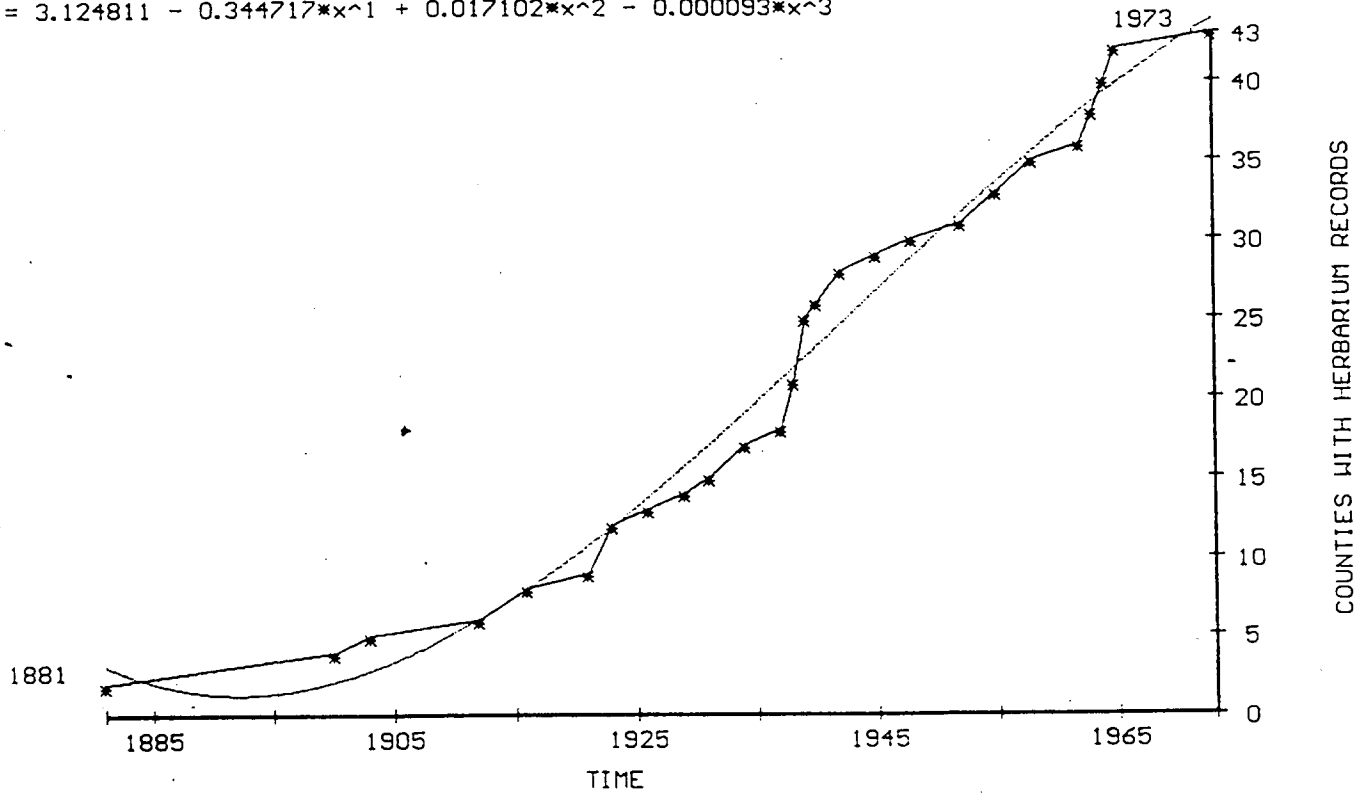


Counties reporting the exotic *Hyoscyamus niger* (black henbane), 1875-1994.

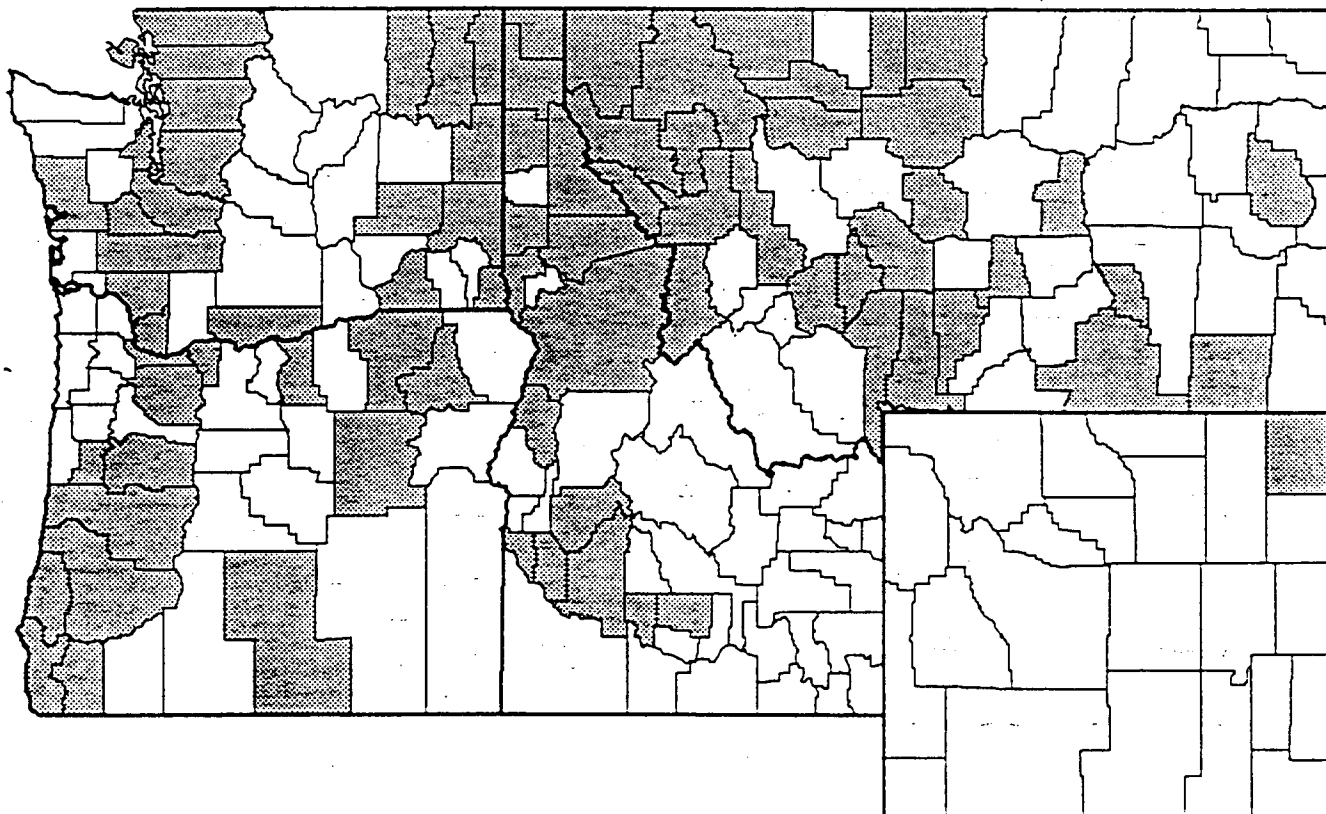


Hyoscyamus niger INCREASE IN NORTHWEST STATES

$$y = 3.124811 - 0.344717 * x^1 + 0.017102 * x^2 - 0.000093 * x^3$$

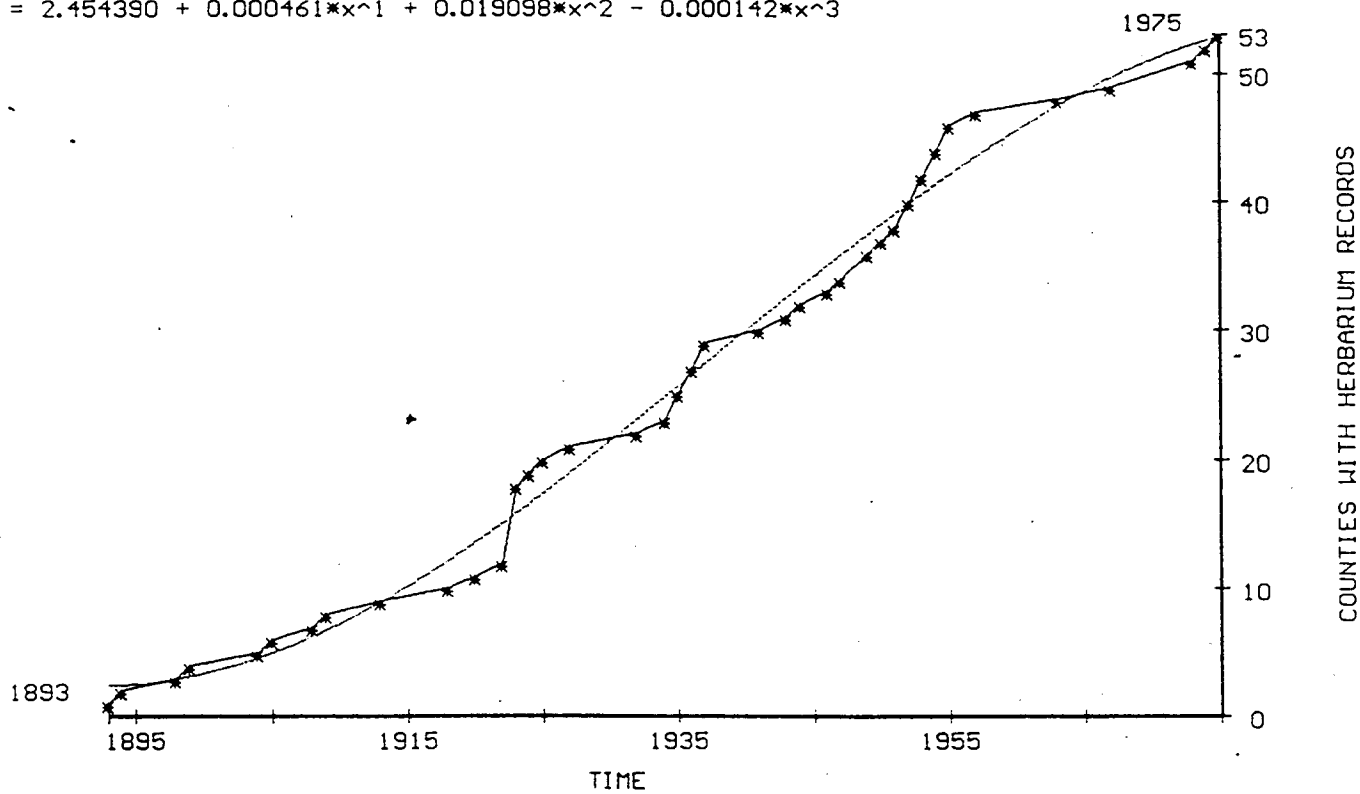


Counties reporting the exotic *Hypericum perforatum* (common St. Johns wort), 1875-1994.

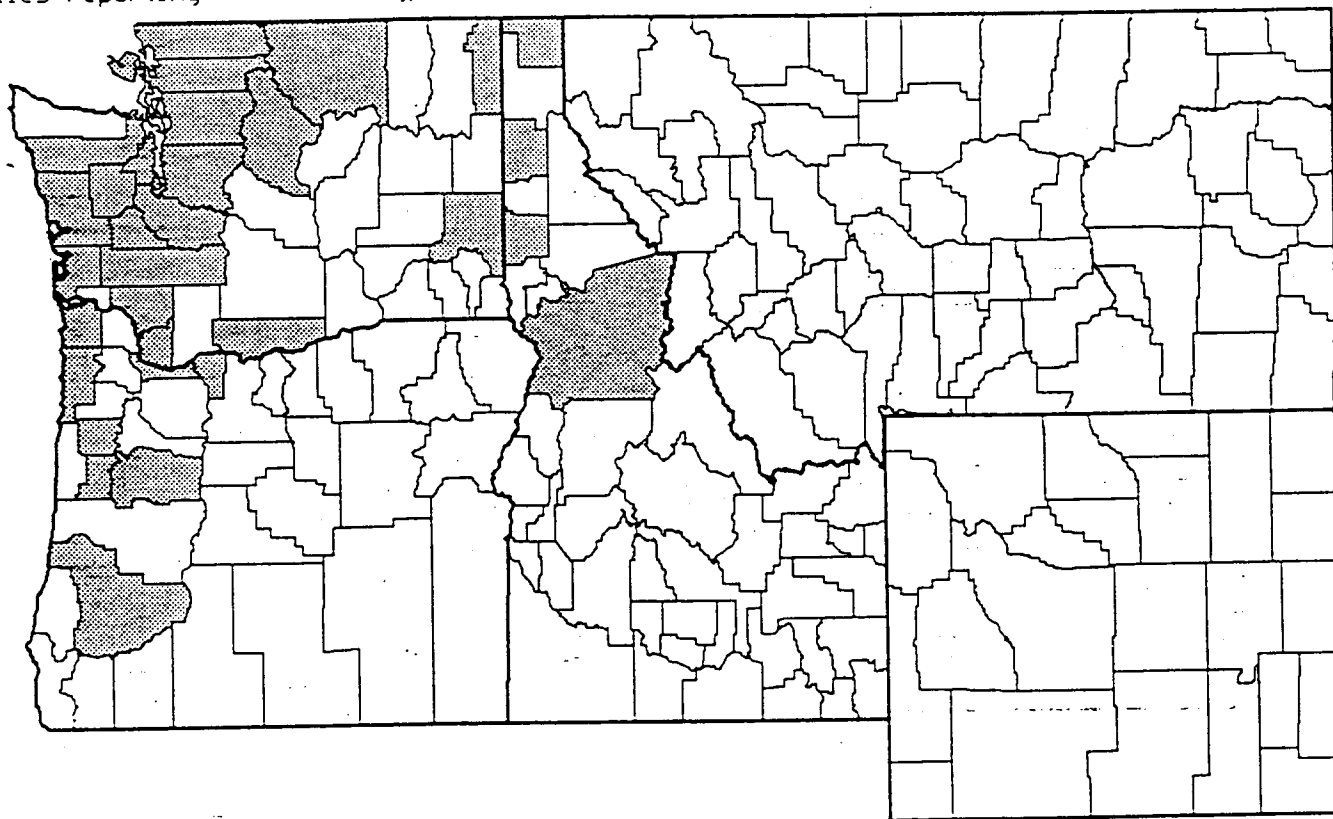


Hypericum perforatum INCREASE IN NORTHWEST STATES

$$y = 2.454390 + 0.000461 \cdot x^1 + 0.019098 \cdot x^2 - 0.000142 \cdot x^3$$

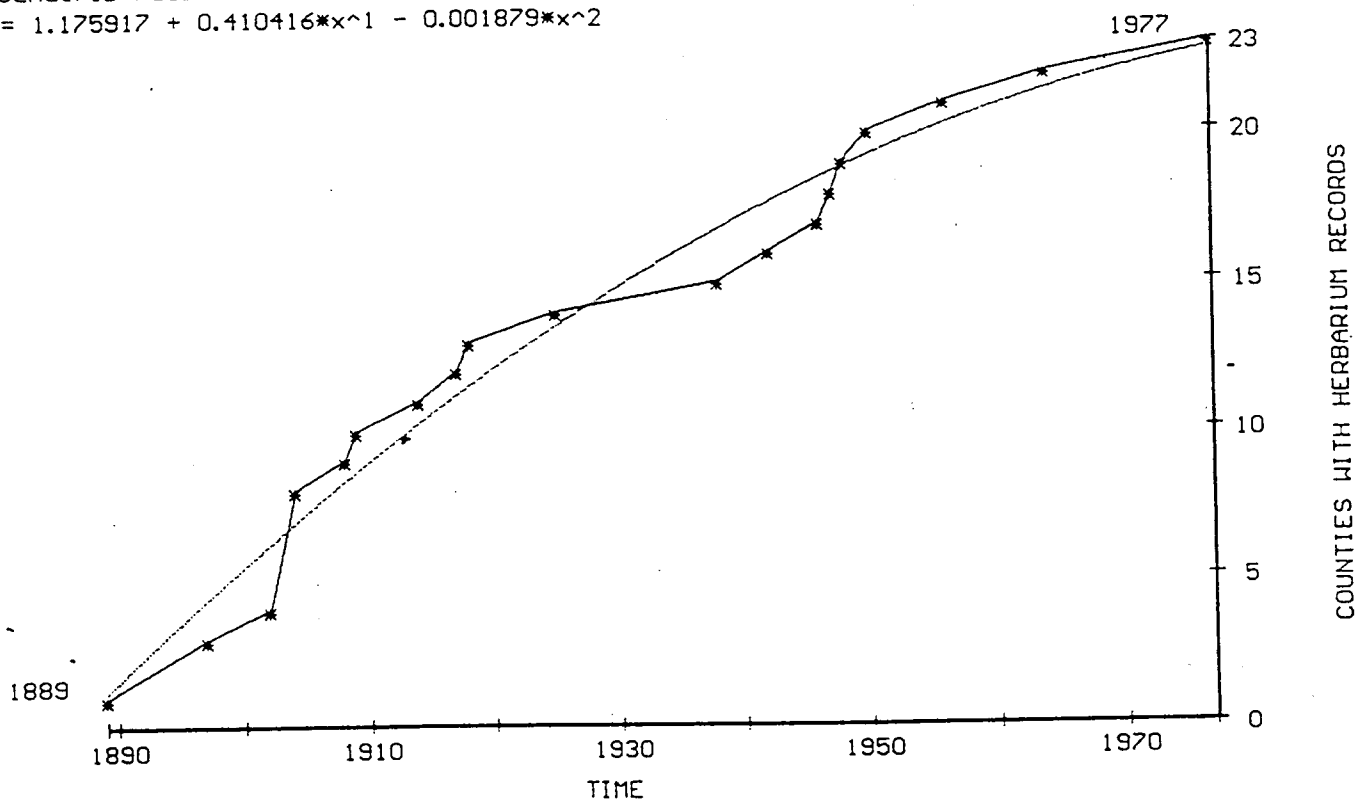


Counties reporting the exotic *Hypochaeris radicata* (spotted cats ear), 1875-1992.

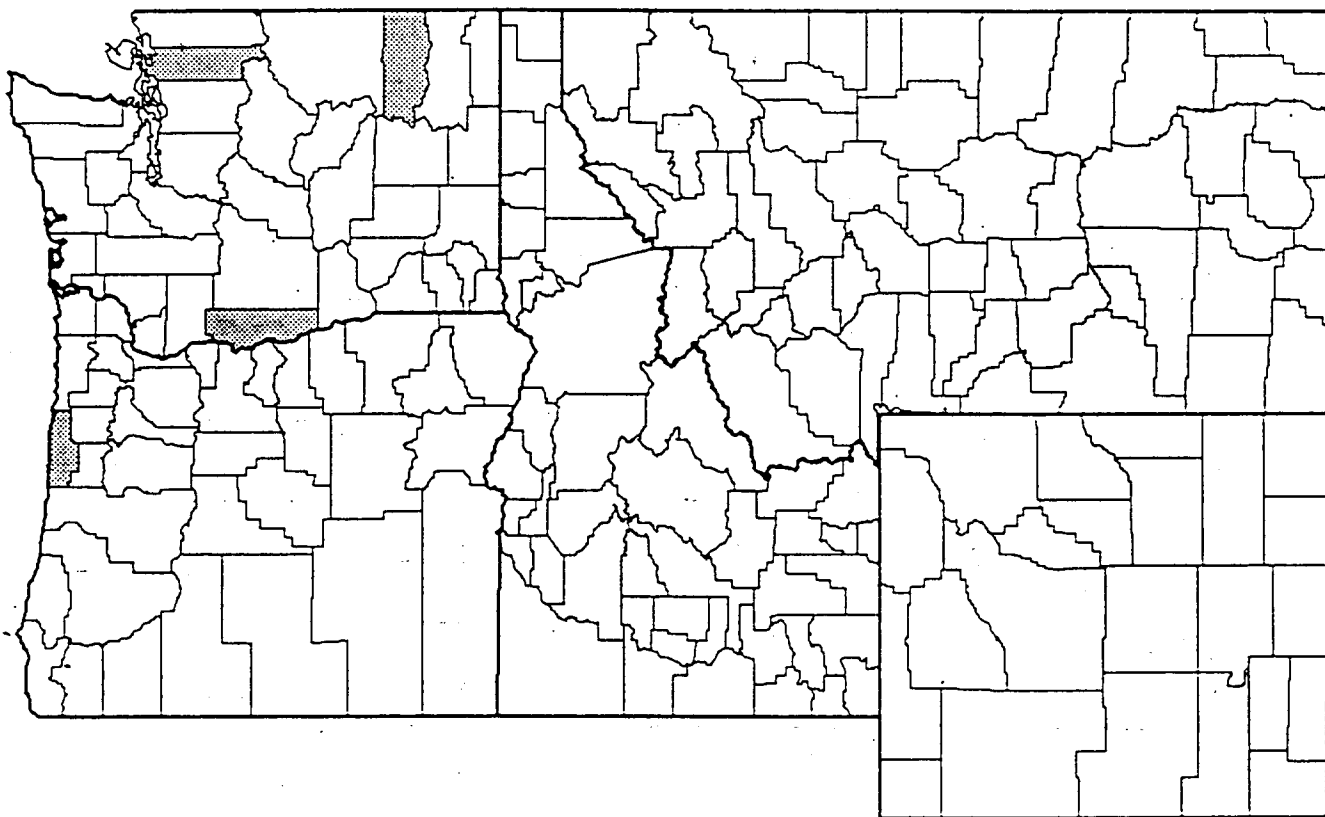


Hypochaeris radicata INCREASE IN NORTHWEST STATES

$$y = 1.175917 + 0.410416 * x^1 - 0.001879 * x^2$$

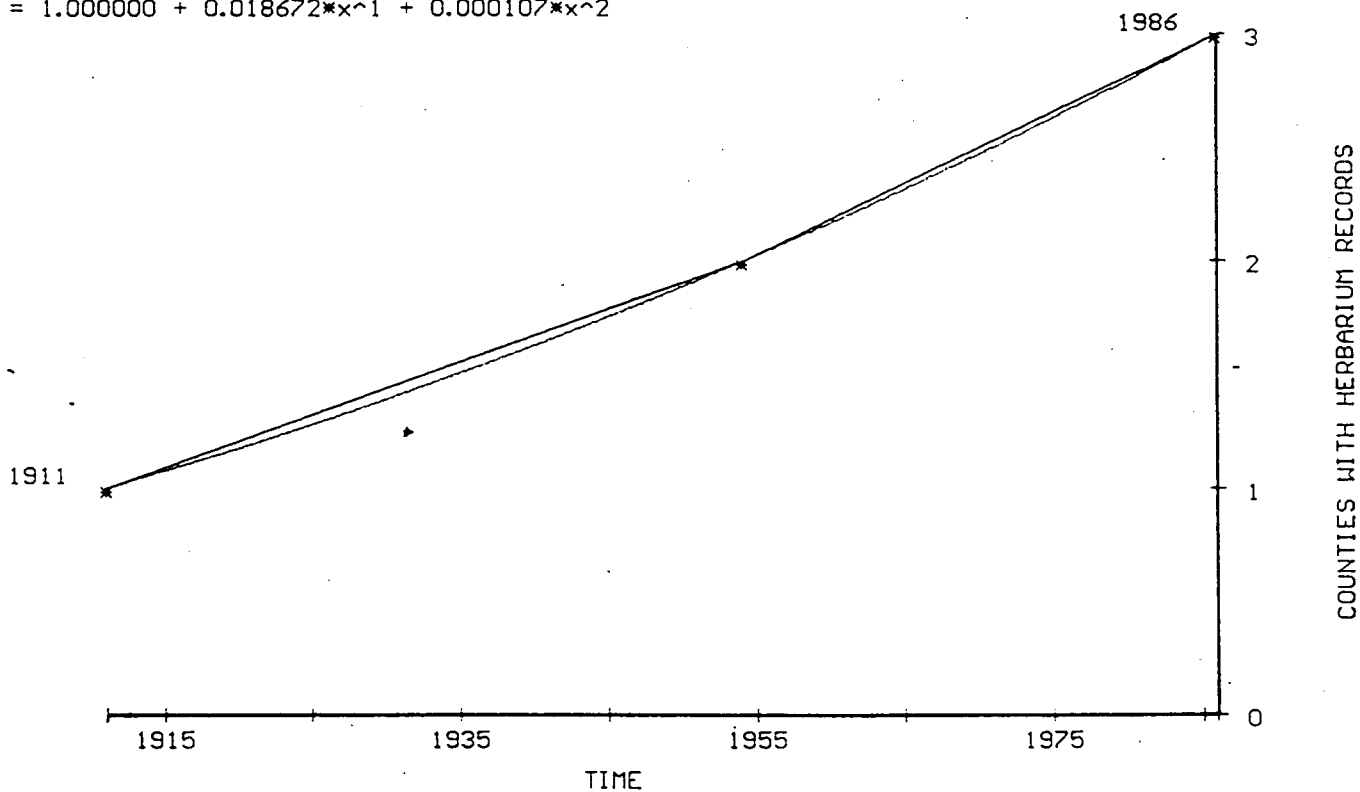


Counties reporting the exotic *Ilex aquifolium* (English holly), 1875-1986.

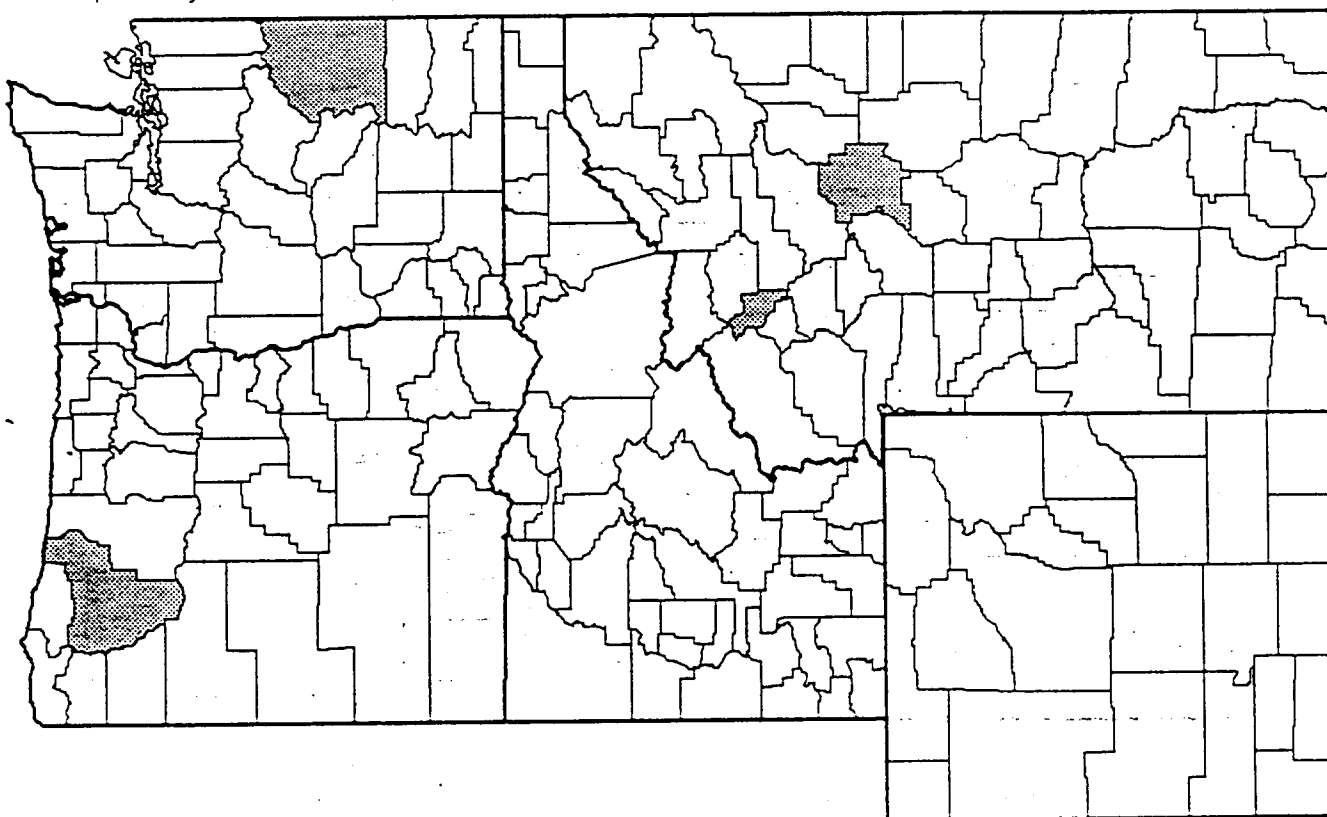


Ilex aquifolium INCREASE IN NORTHWEST STATES

$$y = 1.000000 + 0.018672 * x^1 + 0.000107 * x^2$$

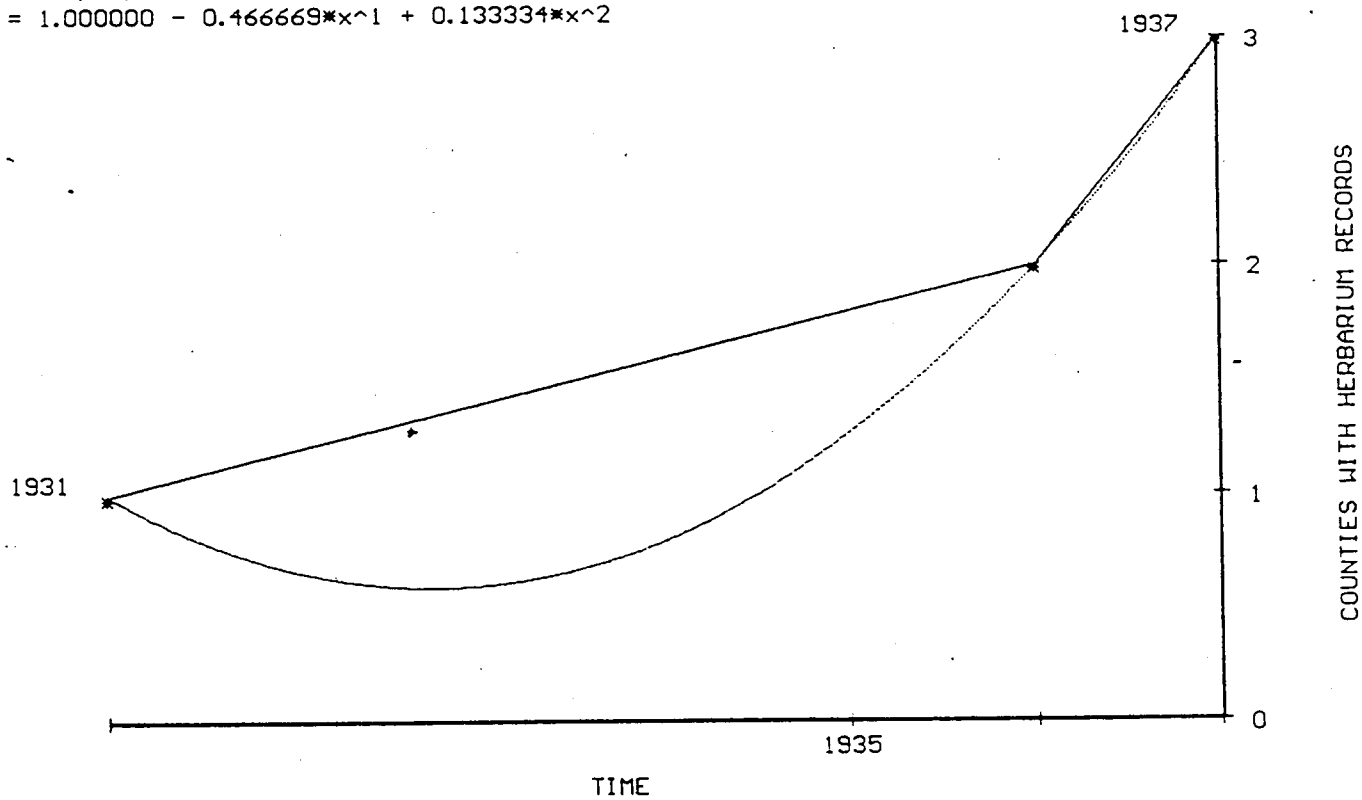


Counties reporting the exotic *Ipomoea purpurea* (tall morningglory), 1875-1990.

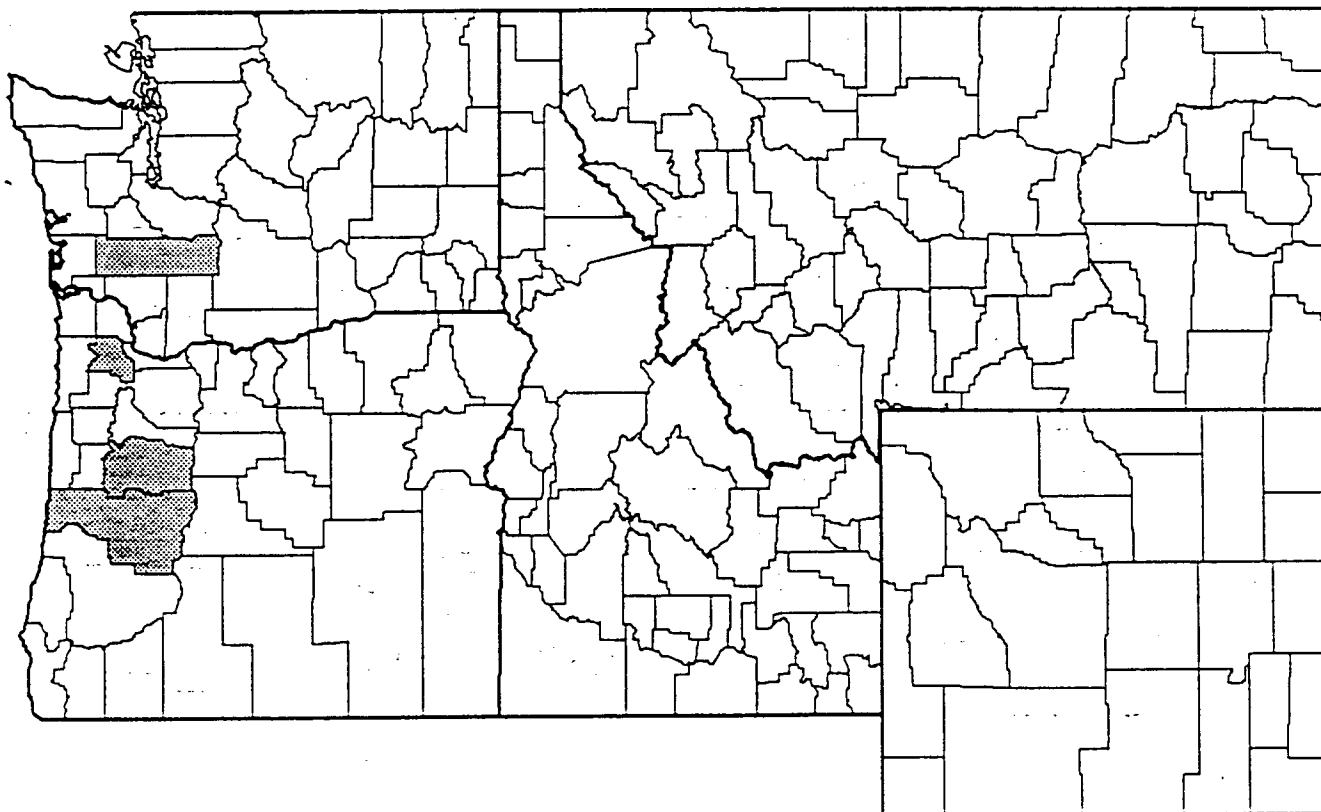


Ipomoea purpurea INCREASE IN NORTHWEST STATES

$$y = 1.000000 - 0.466669 * x^1 + 0.133334 * x^2$$

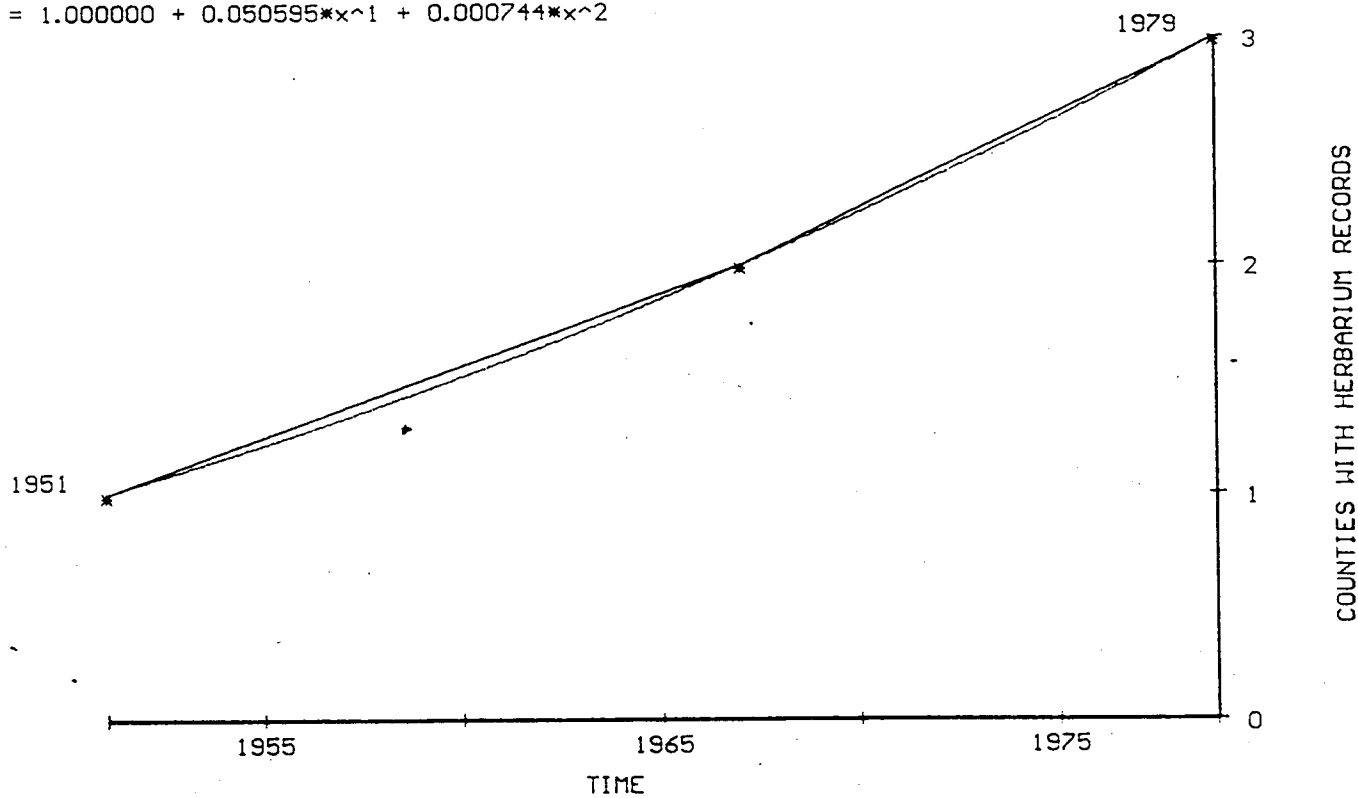


Counties reporting the exotic *Kickxia elatine* (sharp-pointed fluellin), 1875-1993.

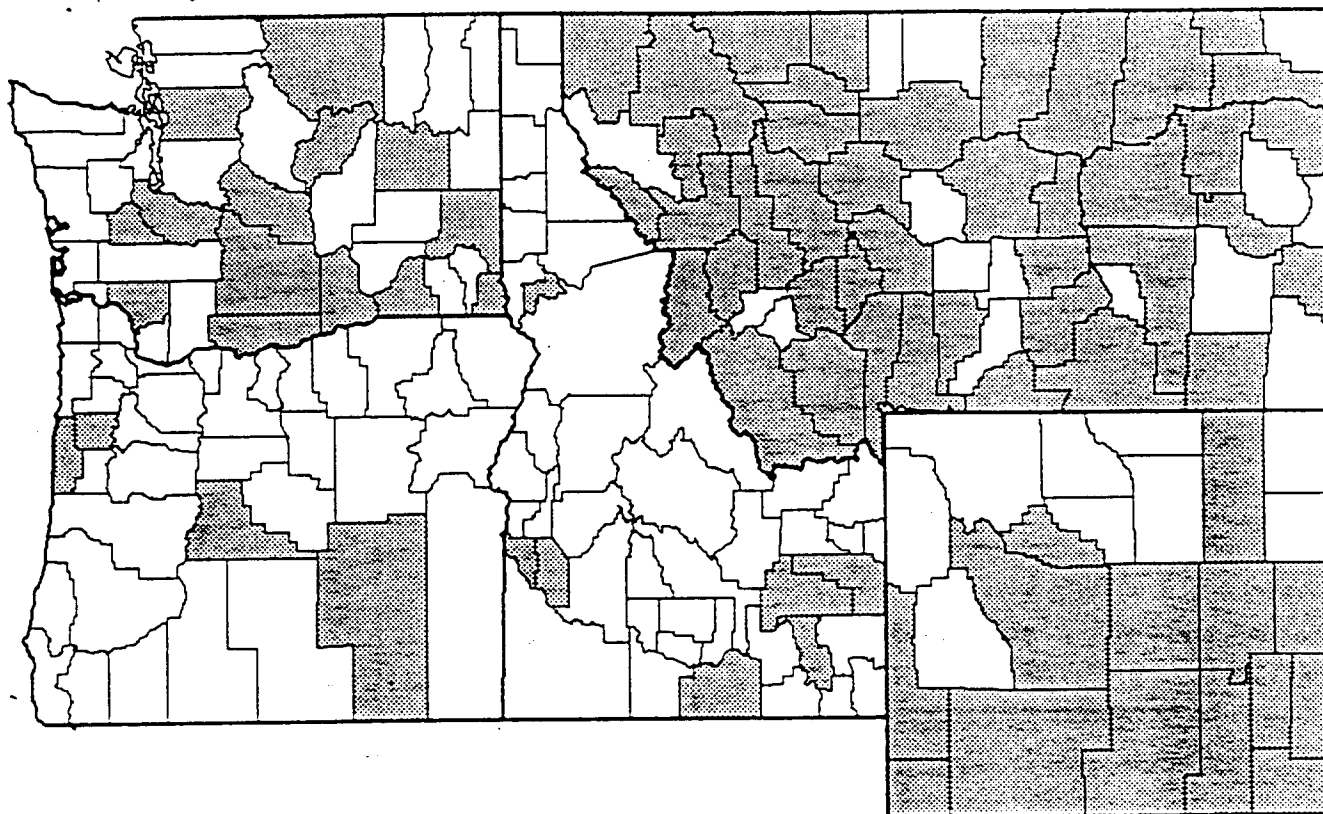


Kickxia elatine INCREASE IN NORTHWEST STATES

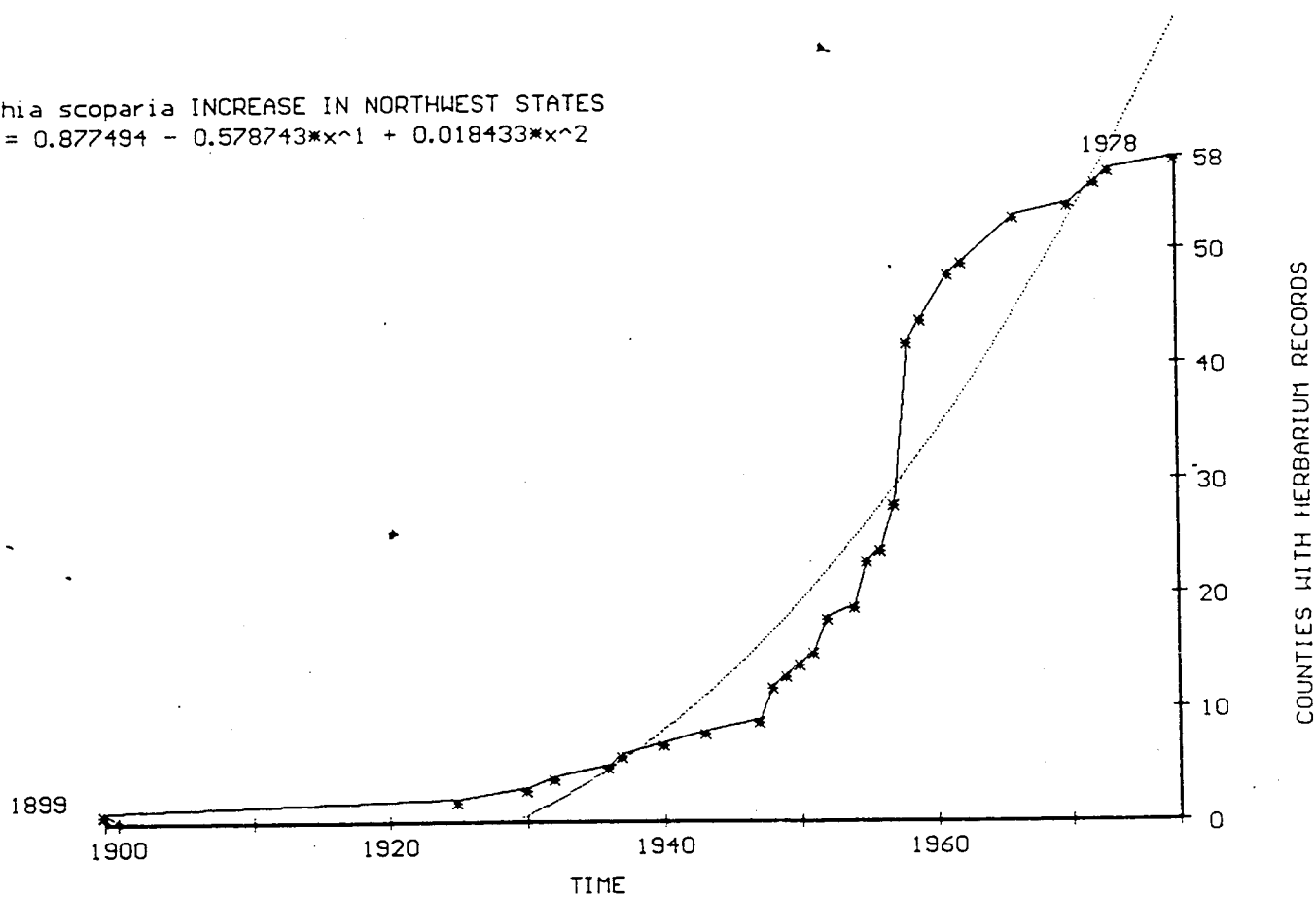
$$y = 1.000000 + 0.050595 * x^1 + 0.000744 * x^2$$



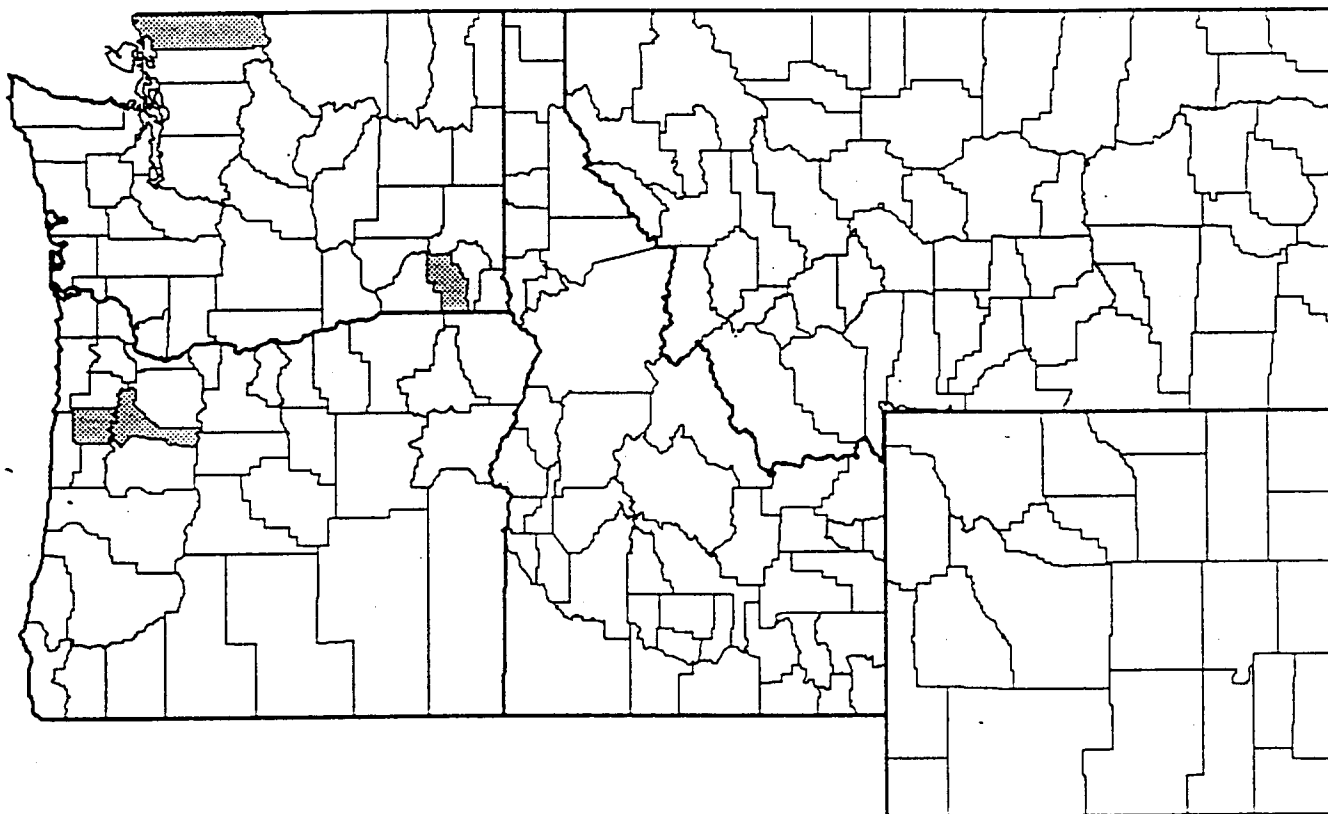
Counties reporting the exotic *Kochia scoparia* (kochia), 1875-1993.



Kochia scoparia INCREASE IN NORTHWEST STATES
 $y = 0.877494 - 0.578743x^1 + 0.018433x^2$

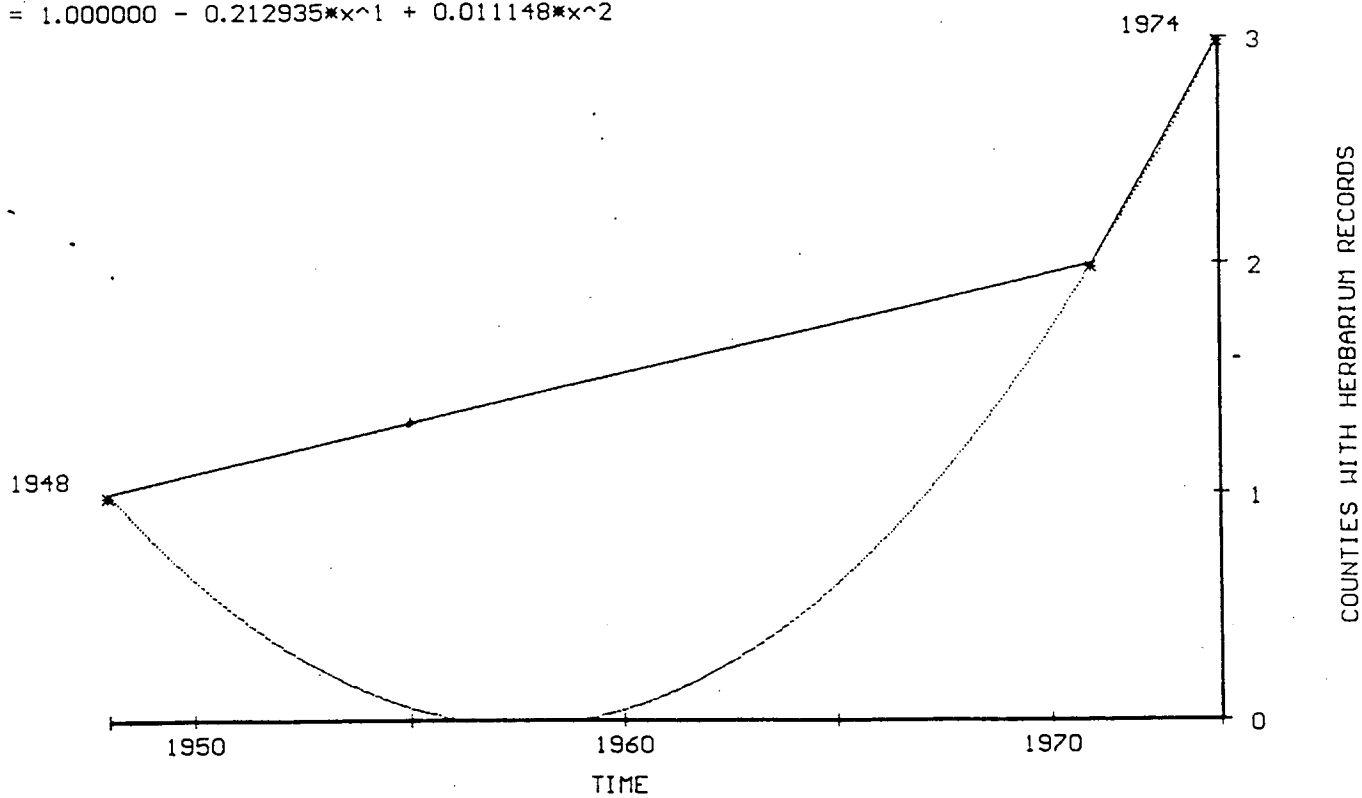


Counties reporting the exotic *Lactuca saligna* (willowleaf lettuce), 1875-1989.

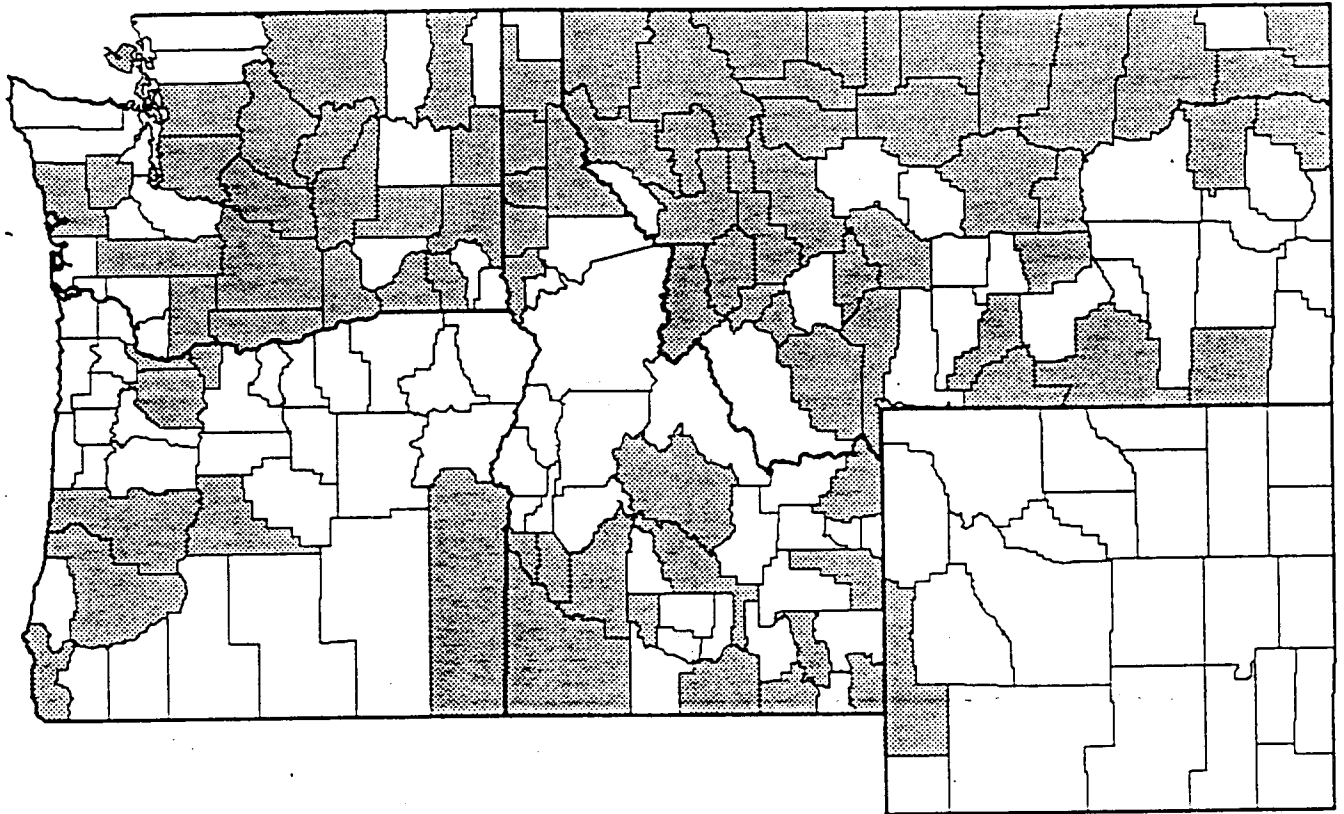


Lactuca saligna INCREASE IN NORTHWEST STATES

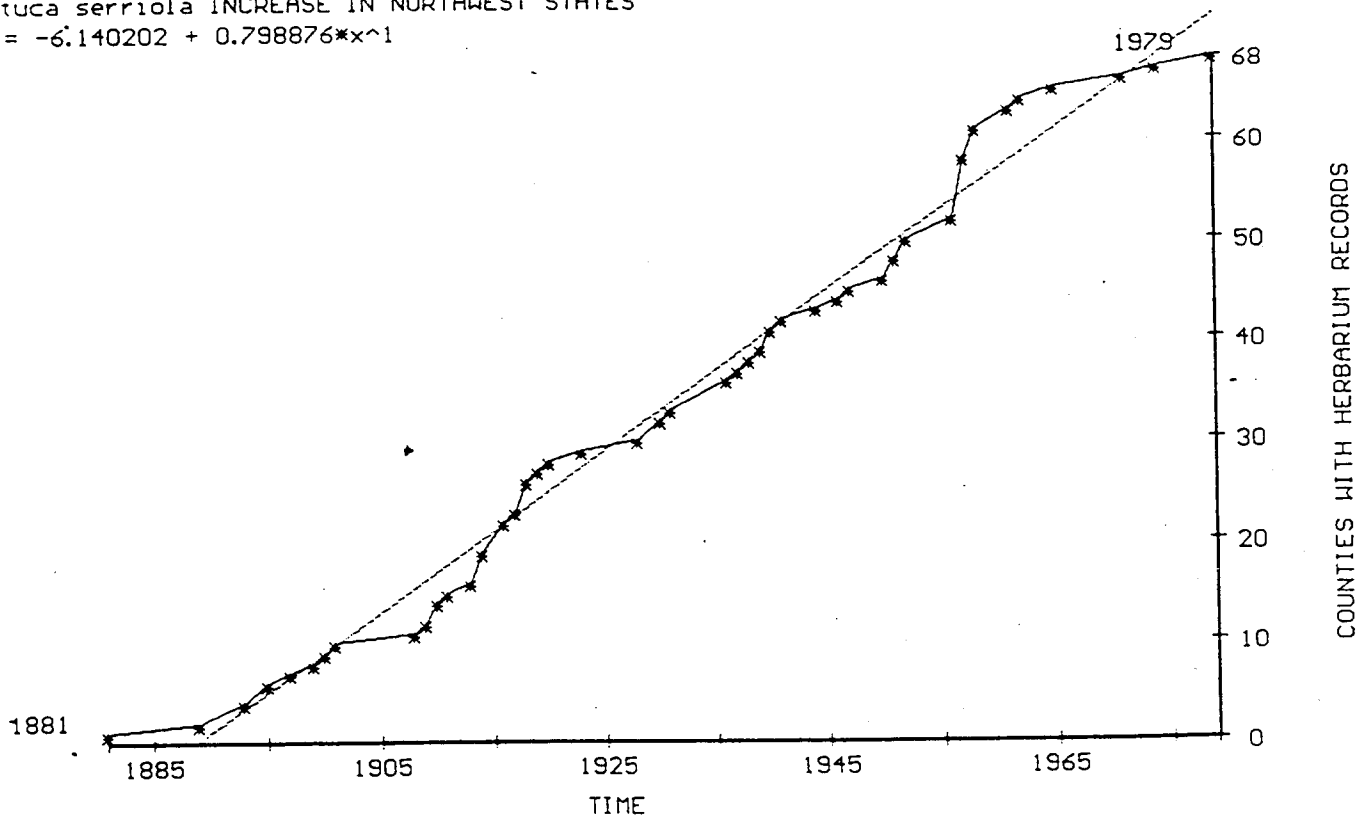
$$y = 1.000000 - 0.212935 * x^1 + 0.011148 * x^2$$



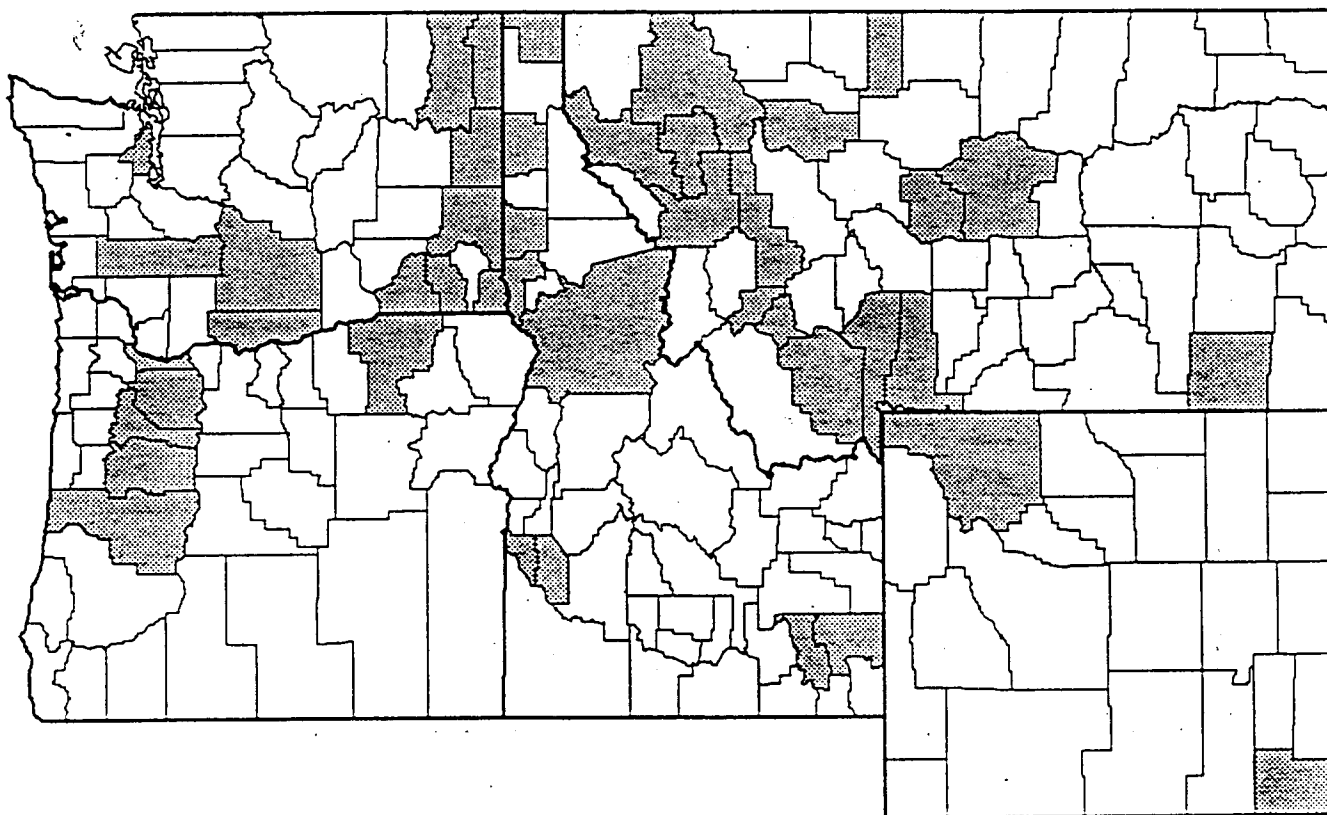
Counties reporting the exotic *Lactuca serriola* (prickly-lettuce), 1875-1994.



Lactuca serriola INCREASE IN NORTHWEST STATES
 $y = -6.140202 + 0.798876 * x^1$

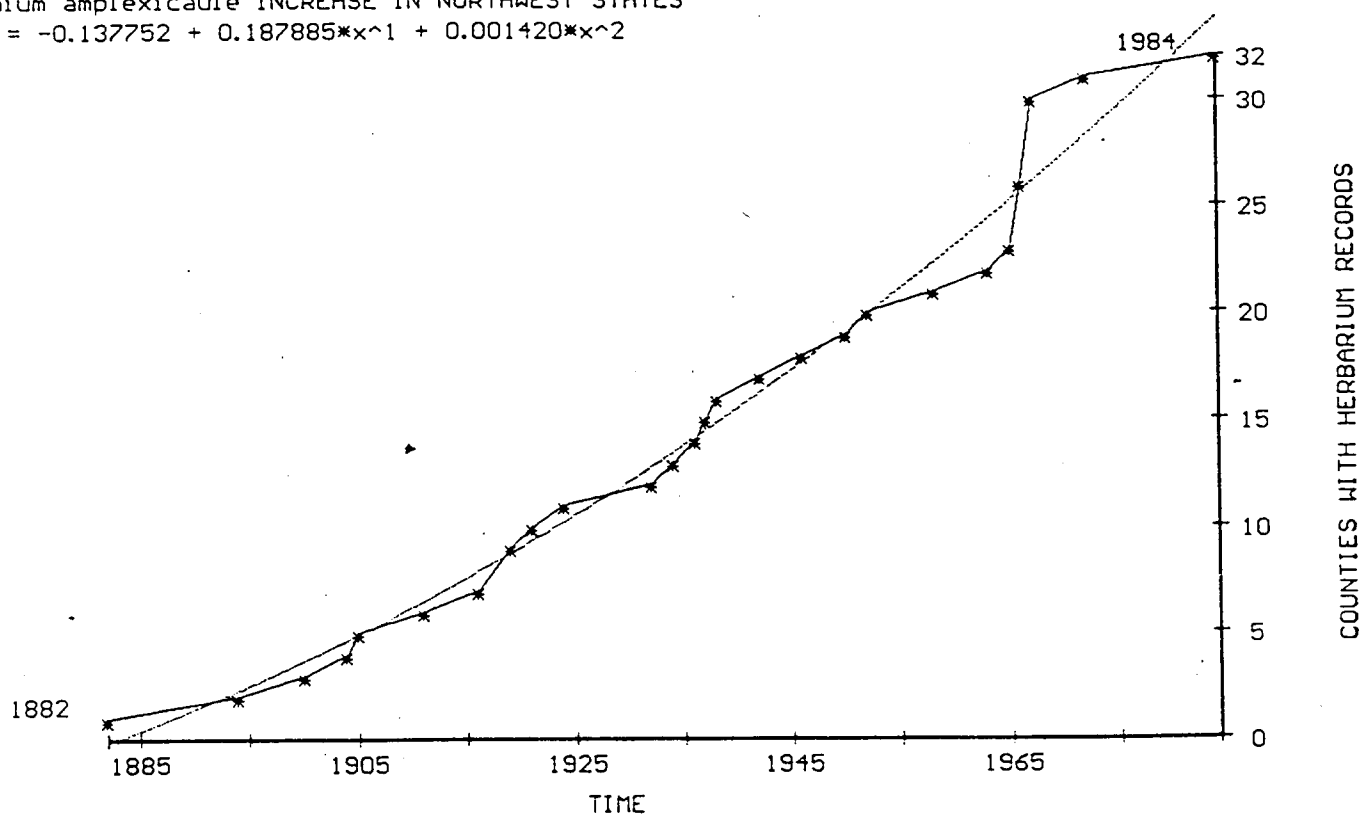


Counties reporting the exotic *Lamium amplexicaule* (henbit), 1875-1993.

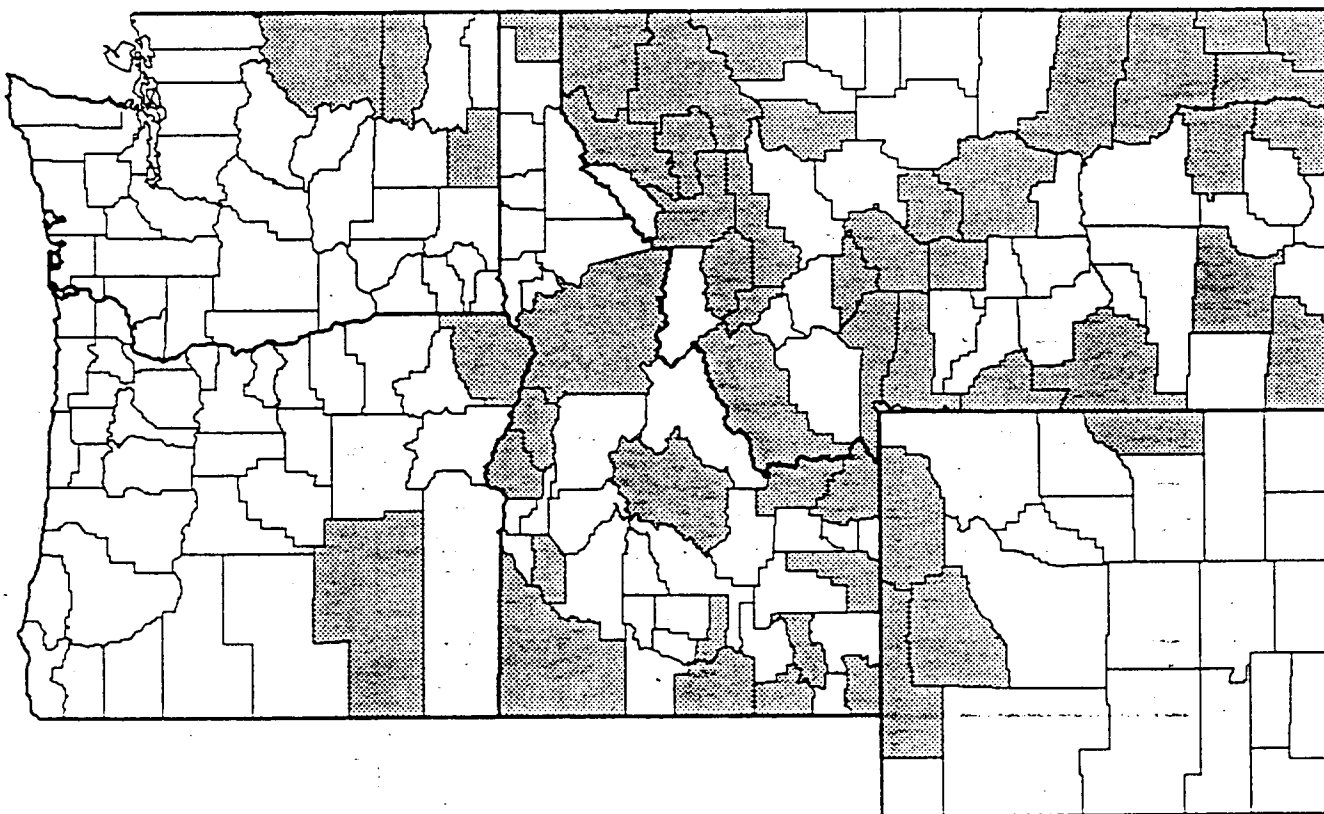


Lamium amplexicaule INCREASE IN NORTHWEST STATES

$$y = -0.137752 + 0.187885 * x^1 + 0.001420 * x^2$$

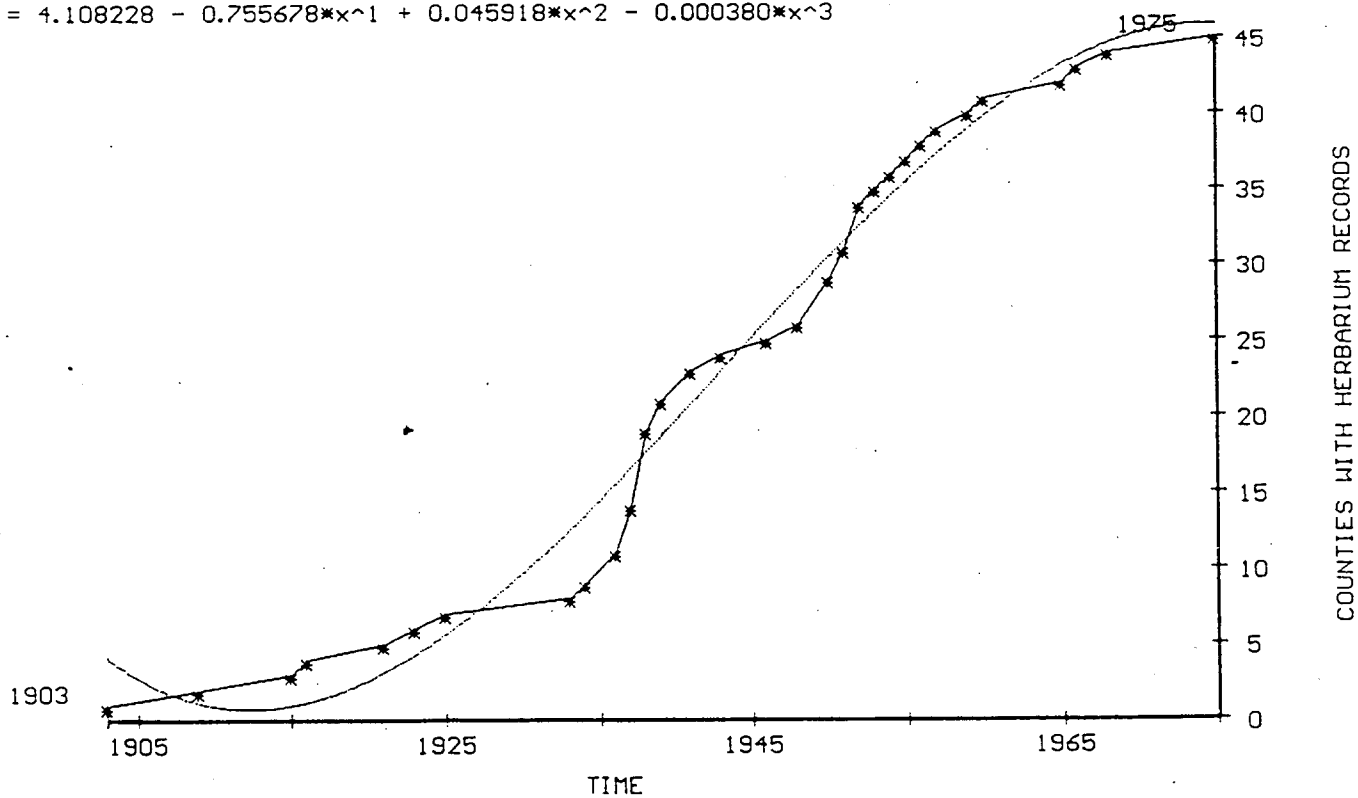


Counties reporting the exotic *Lappula echinata* (European sticktight), 1875-1993.

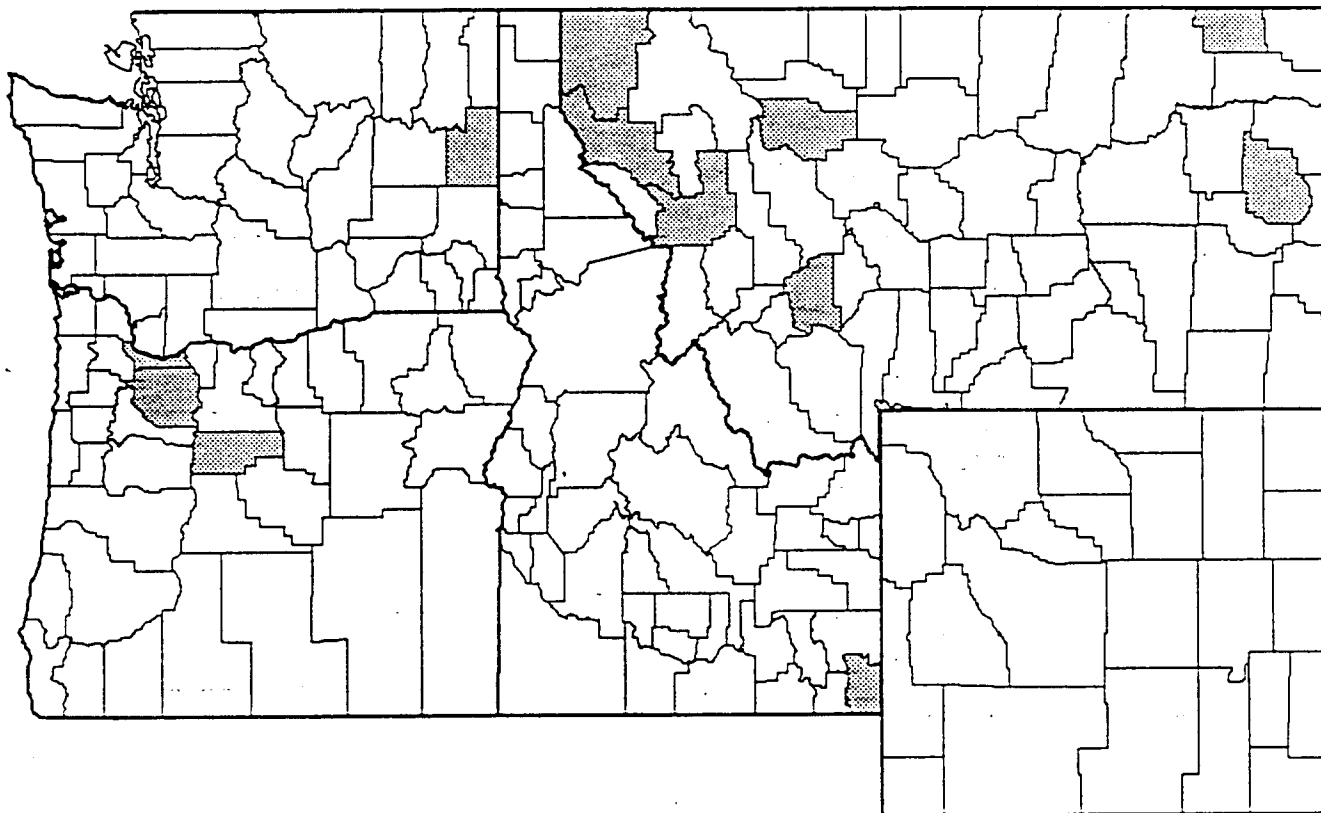


Lappula echinata INCREASE IN NORTHWEST STATES

$$y = 4.108228 - 0.755678x^1 + 0.045918x^2 - 0.000380x^3$$

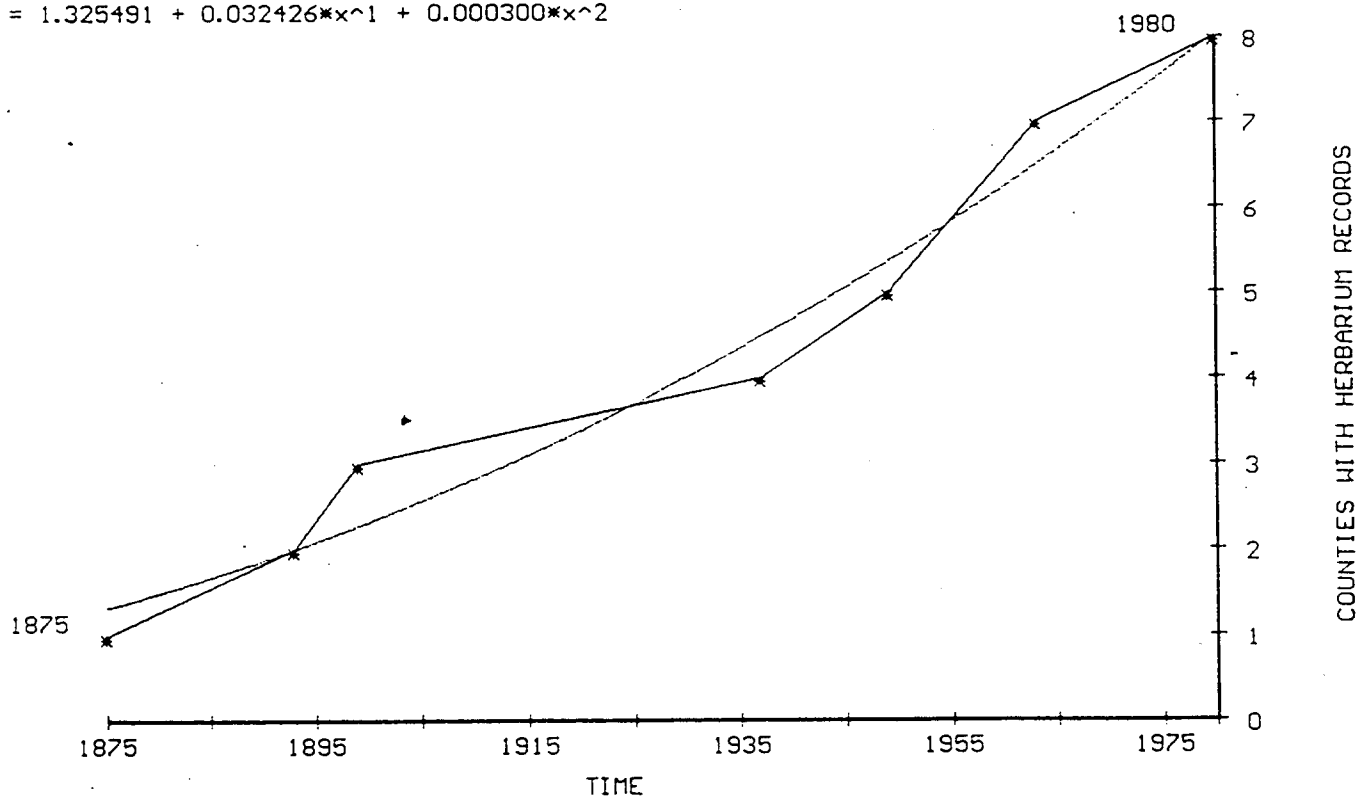


Counties reporting the exotic *Leonurus cardiaca* (motherwort), 1875-1993.

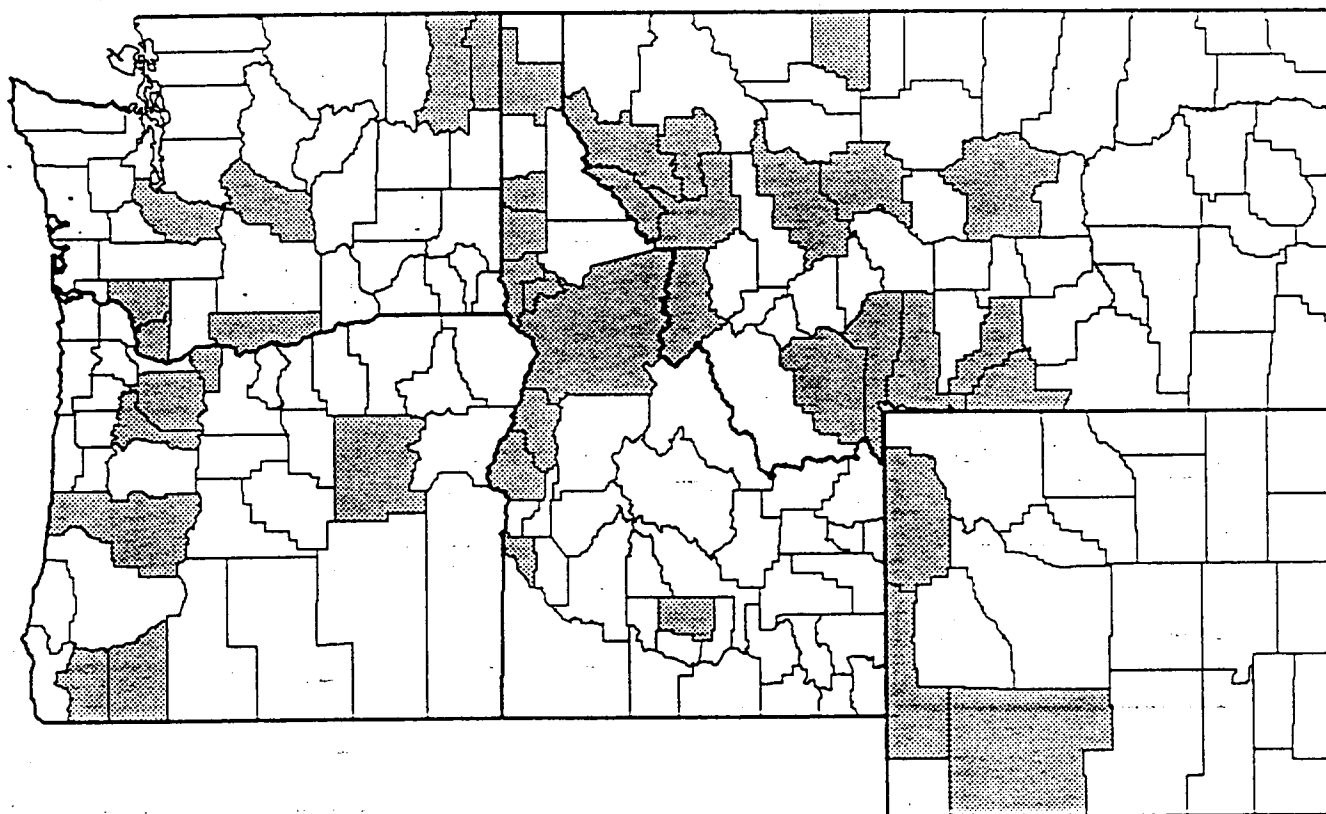


Leonurus cardiaca INCREASE IN NORTHWEST STATES

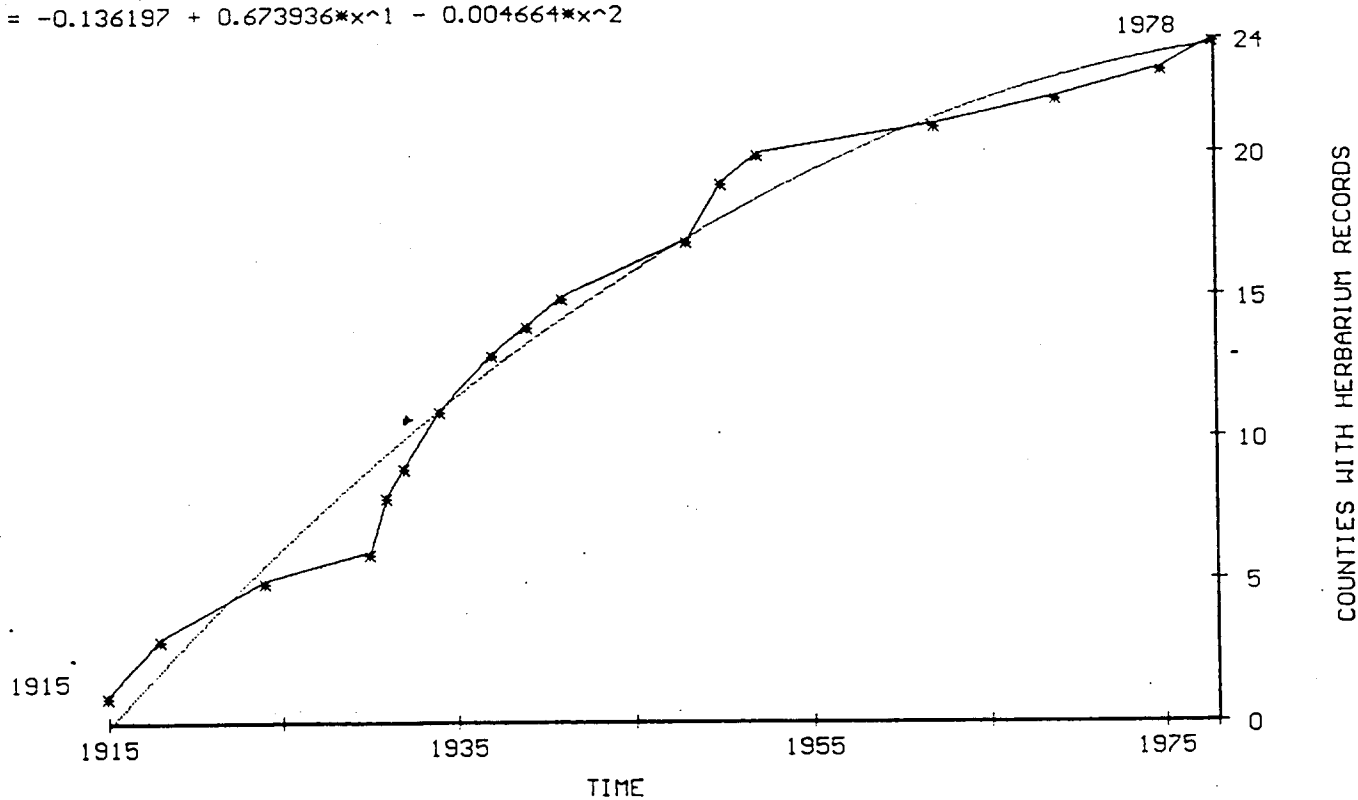
$$y = 1.325491 + 0.032426 * x^1 + 0.000300 * x^2$$



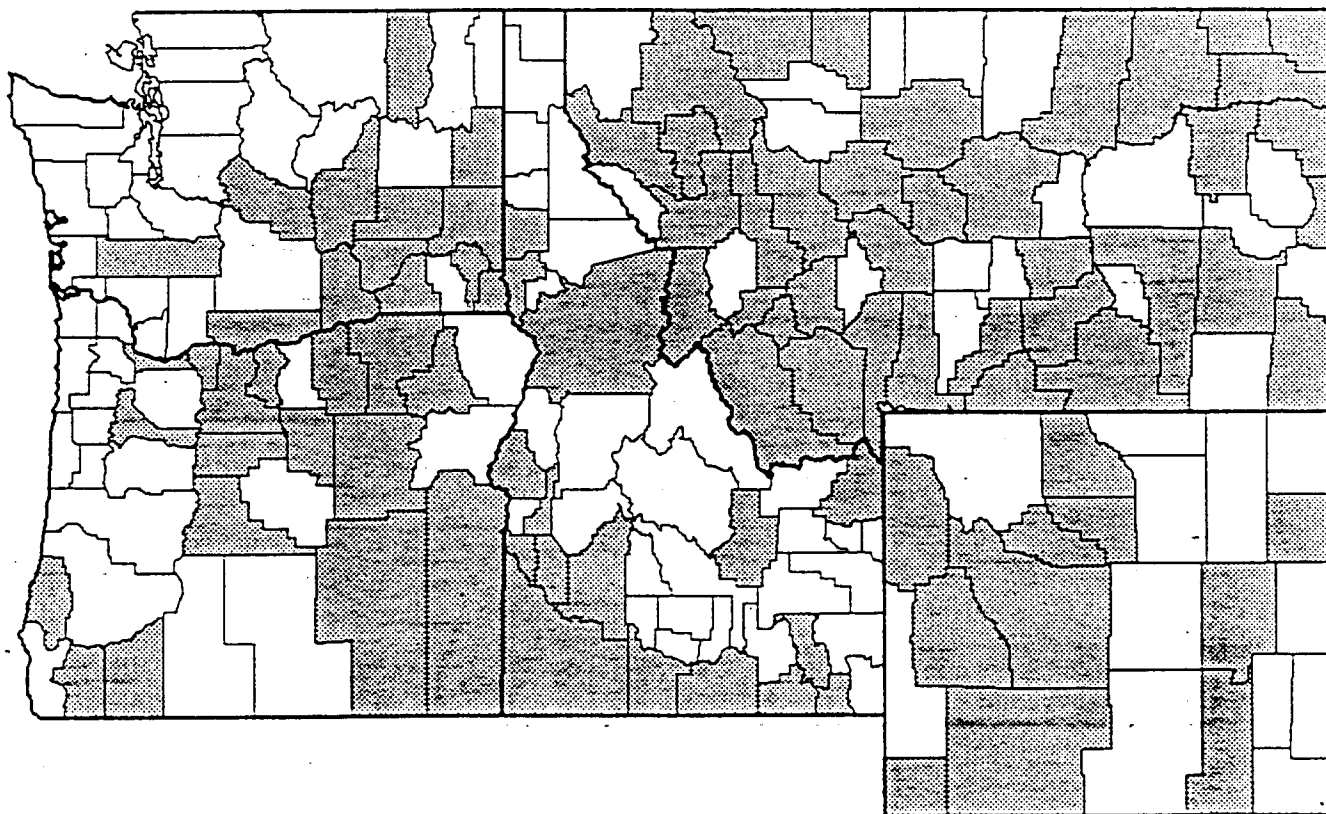
Counties reporting the exotic *Lepidium campestre* (field pepperweed), 1875-1993.



Lepidium campestre INCREASE IN NORTHWEST STATES
 $y = -0.136197 + 0.673936 * x^1 - 0.004664 * x^2$

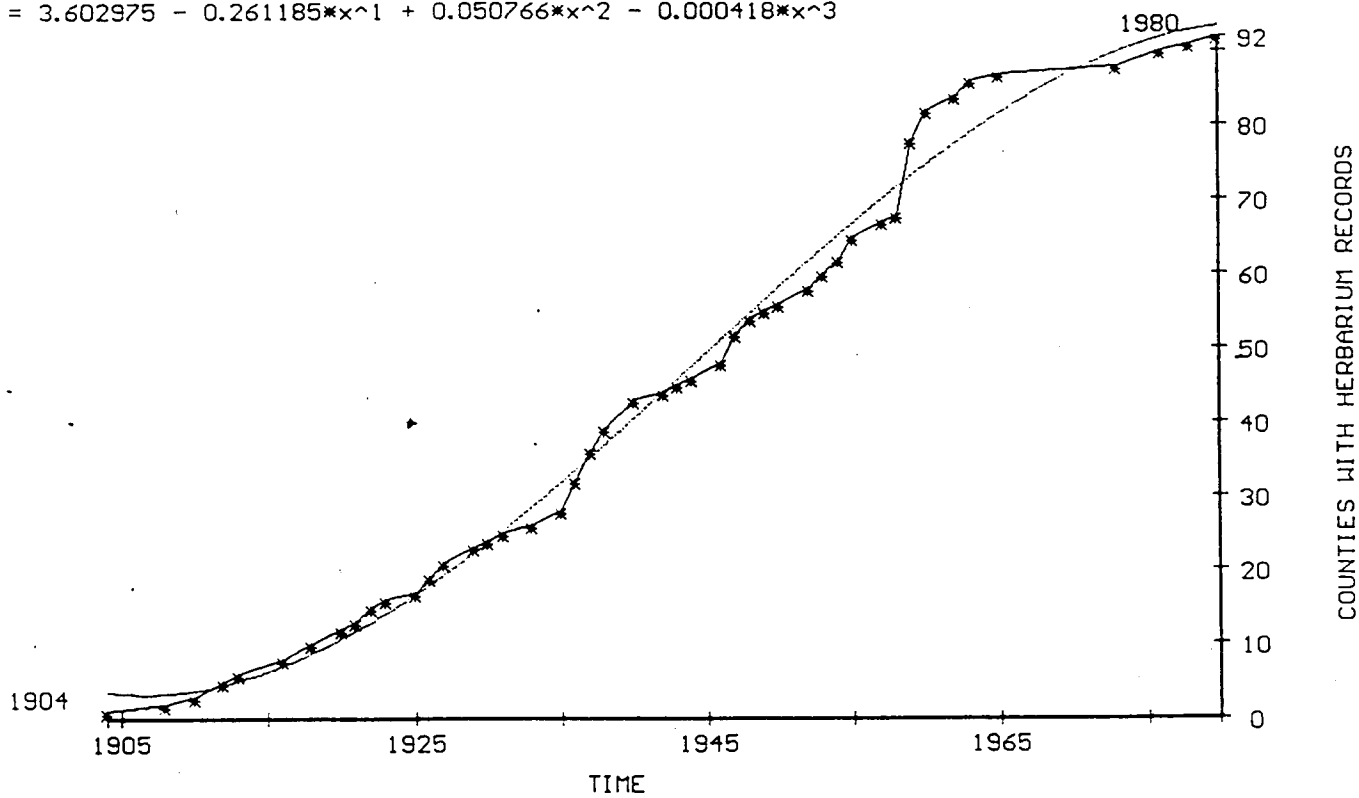


Counties reporting the exotic *Lepidium perfoliatum* (clasping pepperweed), 1875-1993.

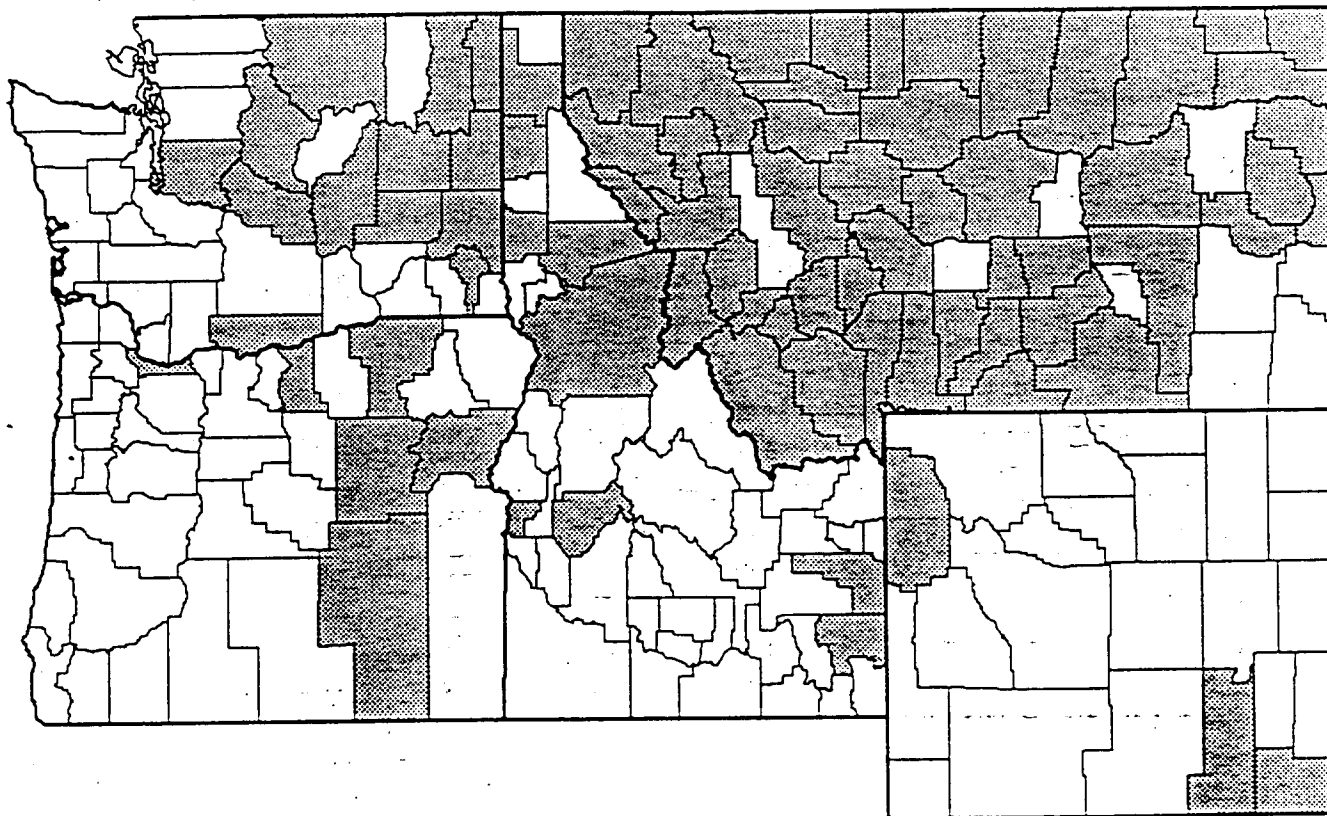


Lepidium perfoliatum INCREASE IN NORTHWEST STATES

$$y = 3.602975 - 0.261185 \cdot x^1 + 0.050766 \cdot x^2 - 0.000418 \cdot x^3$$

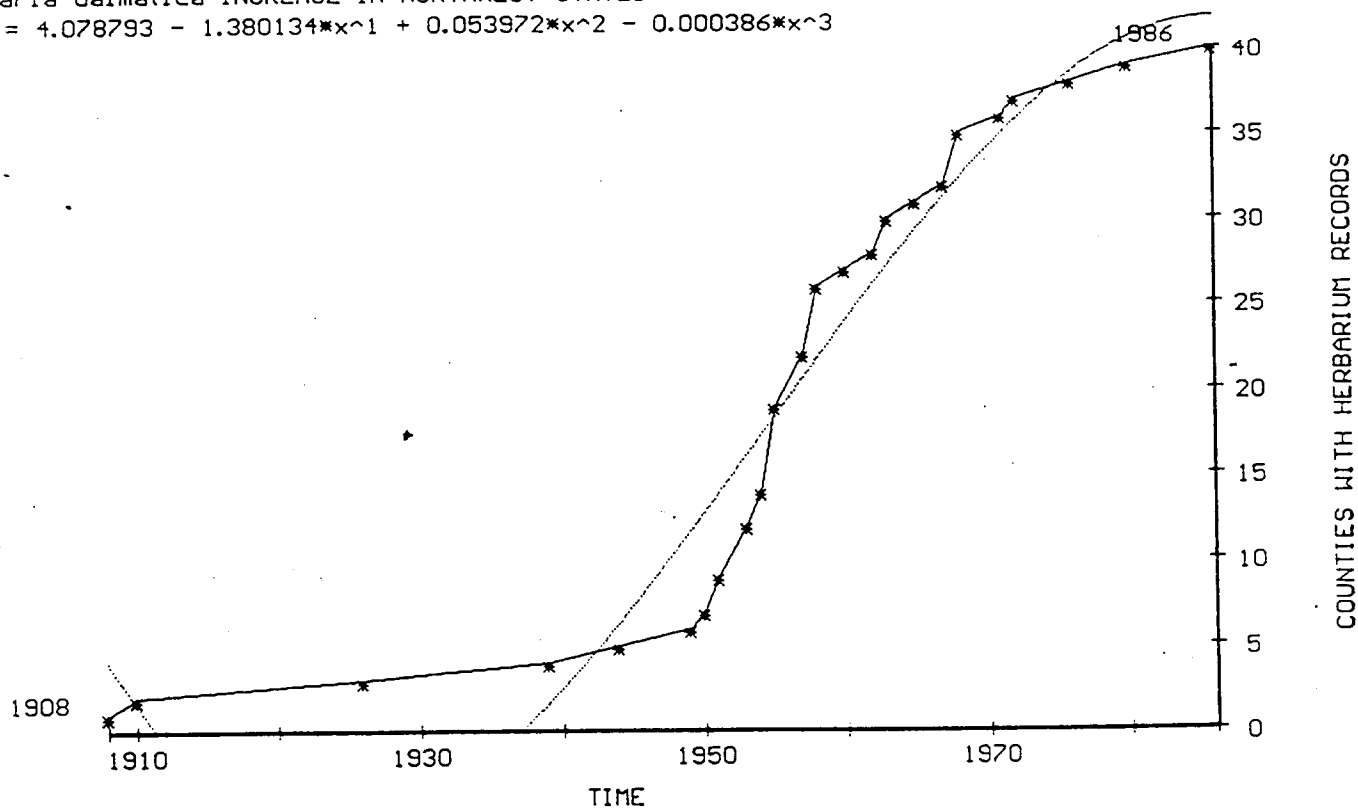


Counties reporting the exotic *Linaria dalmatica* (dalmatian toadflax), 1875-1993.

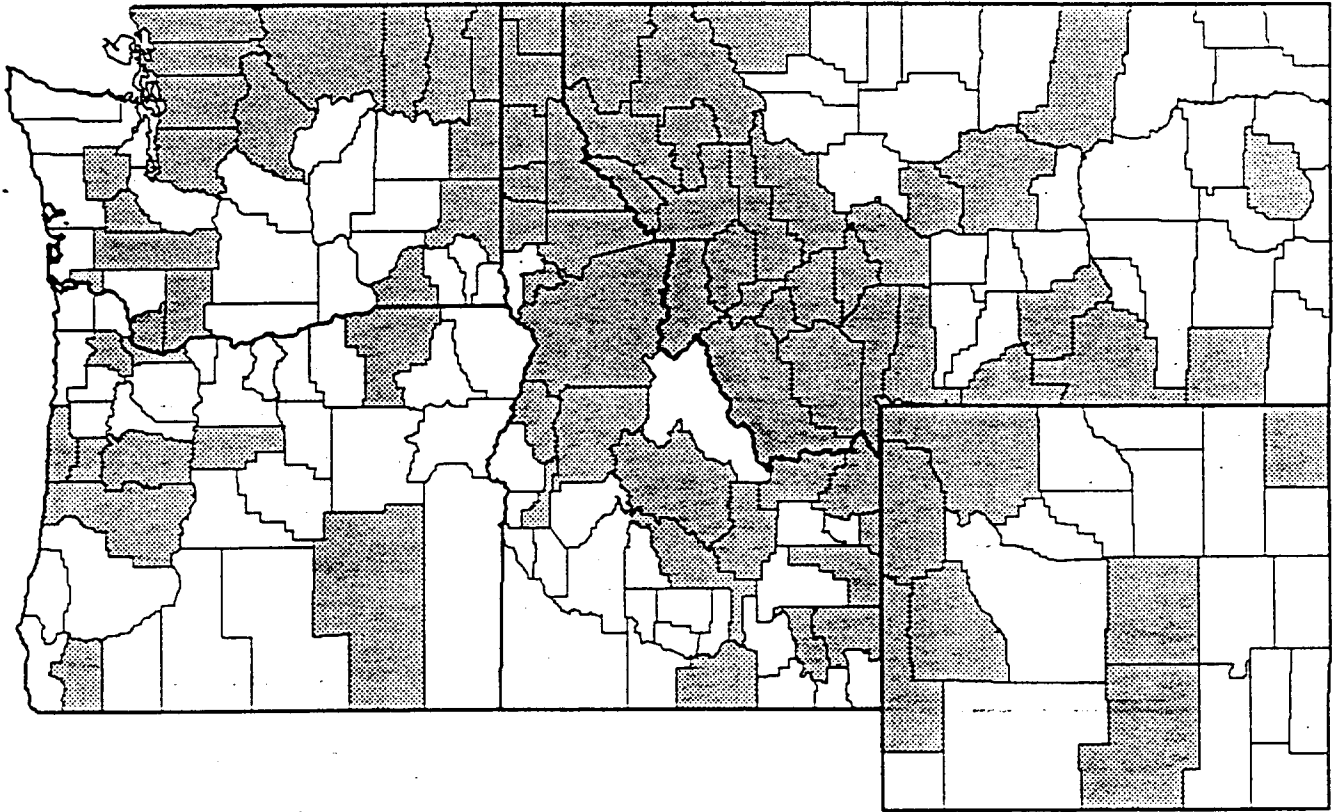


Linaria dalmatica INCREASE IN NORTHWEST STATES

$$y = 4.078793 - 1.380134 * x^1 + 0.053972 * x^2 - 0.000386 * x^3$$

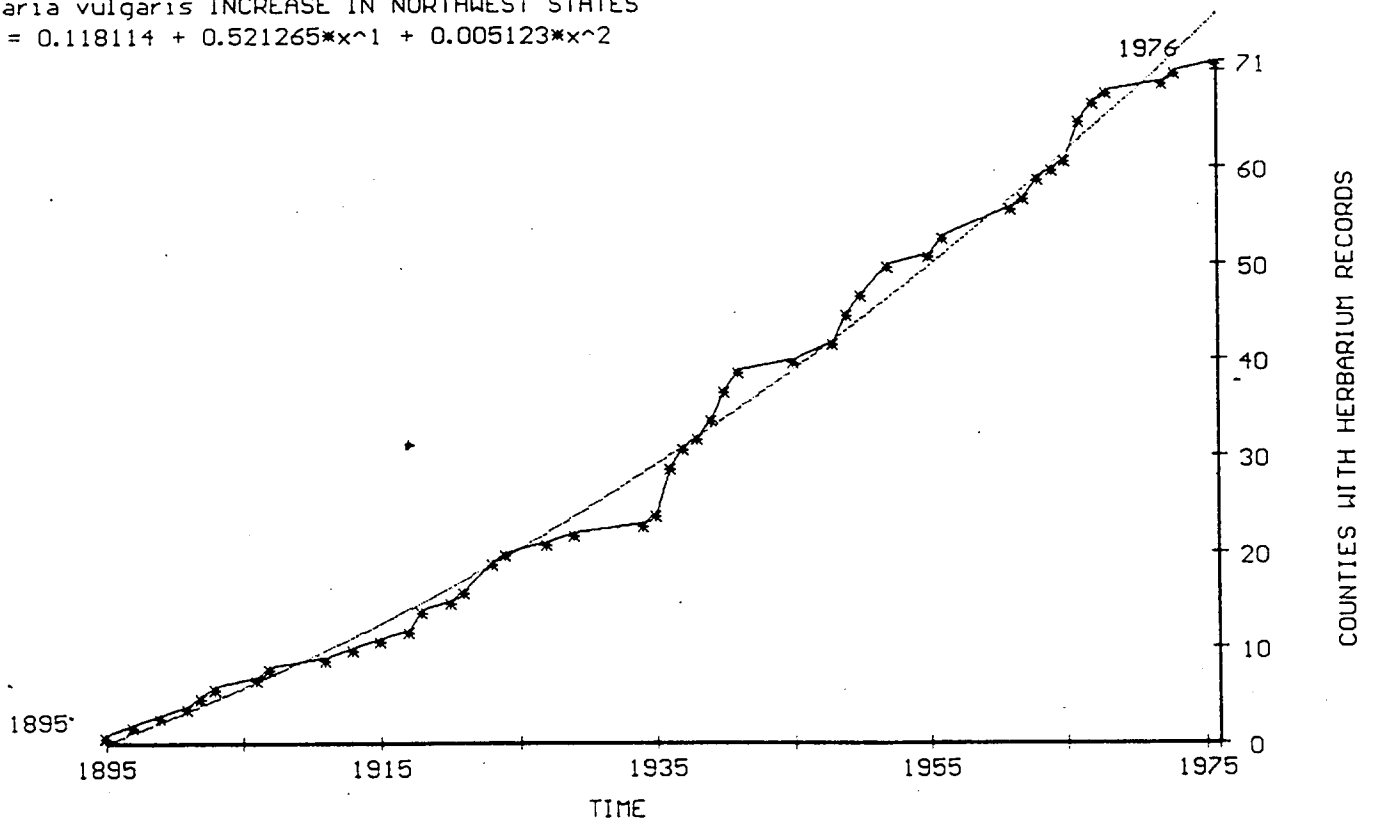


Counties reporting the exotic *Linaria vulgaris* (yellow toadflax), 1875-1994.

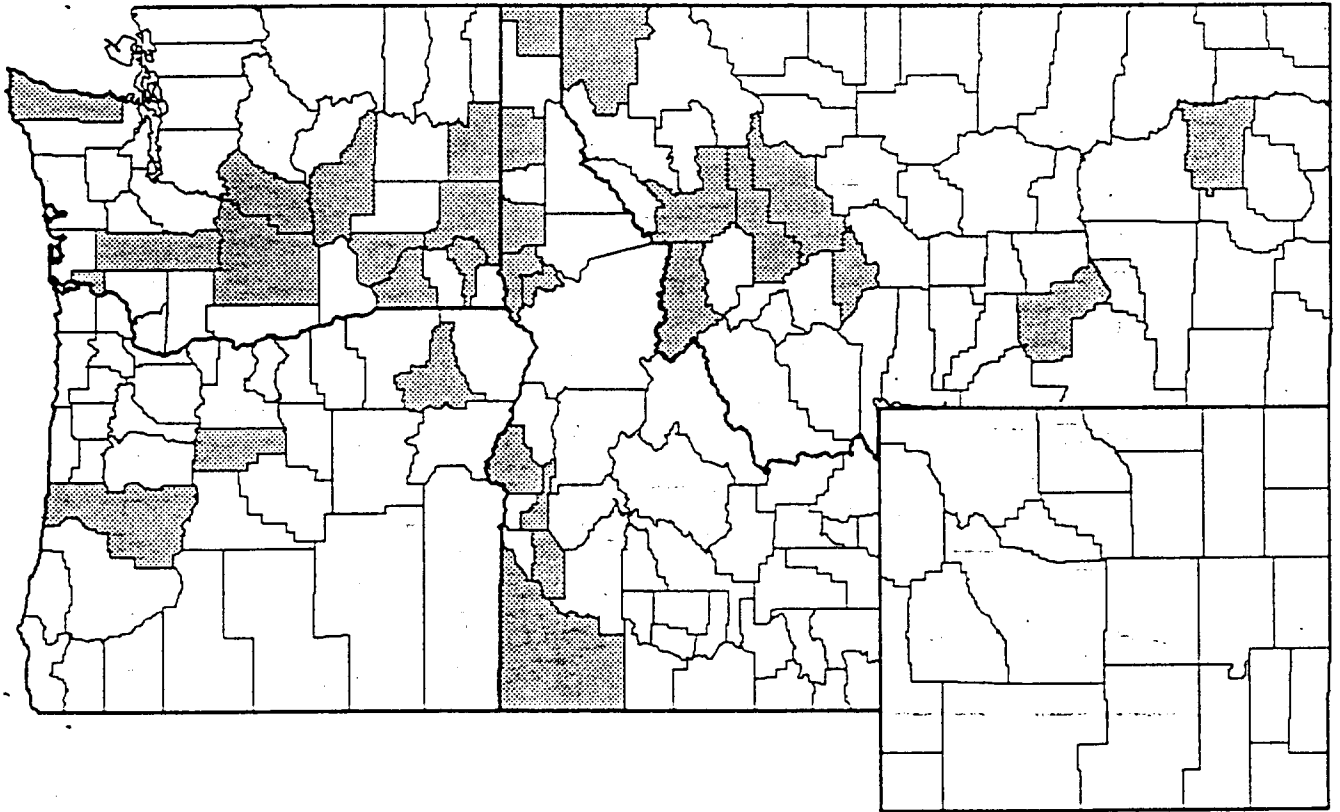


Linaria vulgaris INCREASE IN NORTHWEST STATES

$$y = 0.118114 + 0.521265 * x^1 + 0.005123 * x^2$$

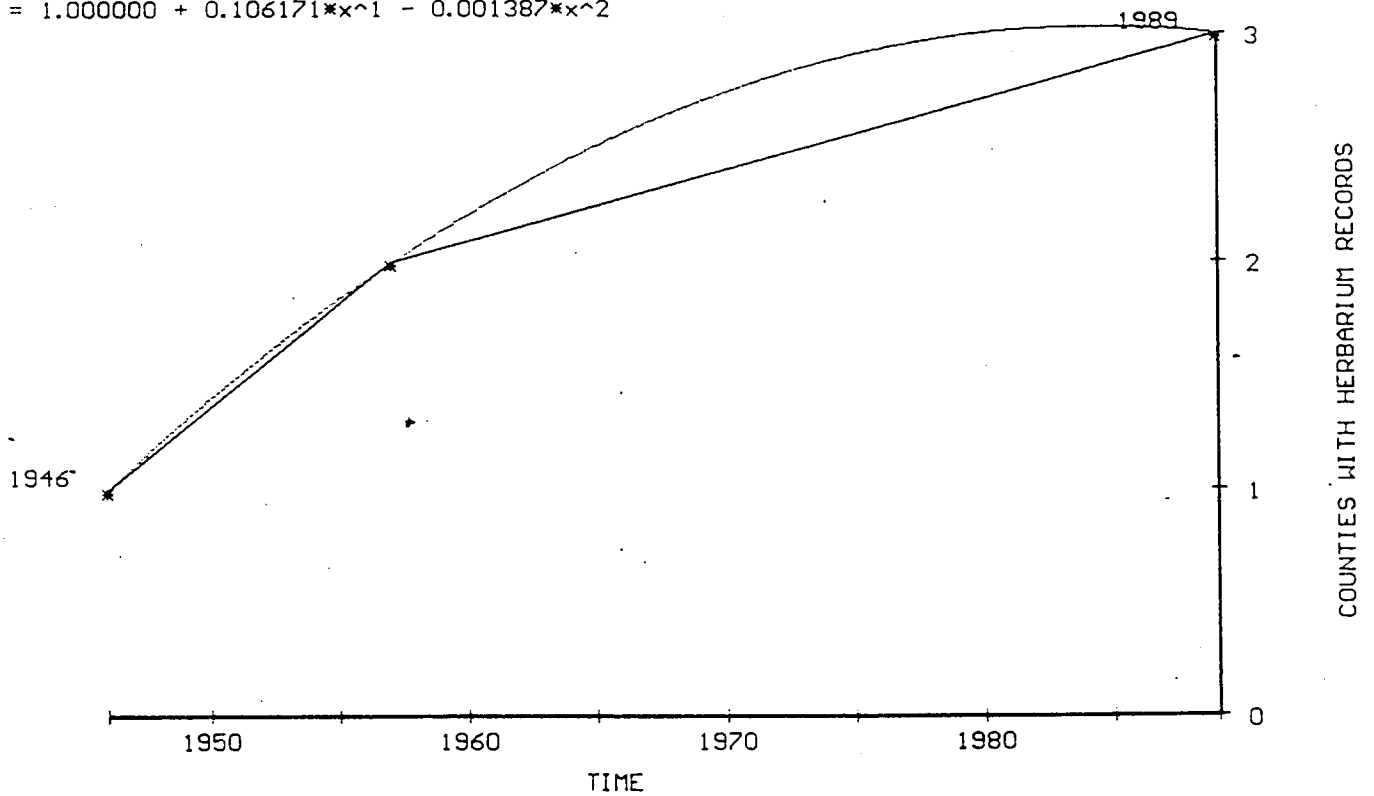


Counties reporting the exotic *Lolium multiflorum* (Italian ryegrass), 1875-1994.

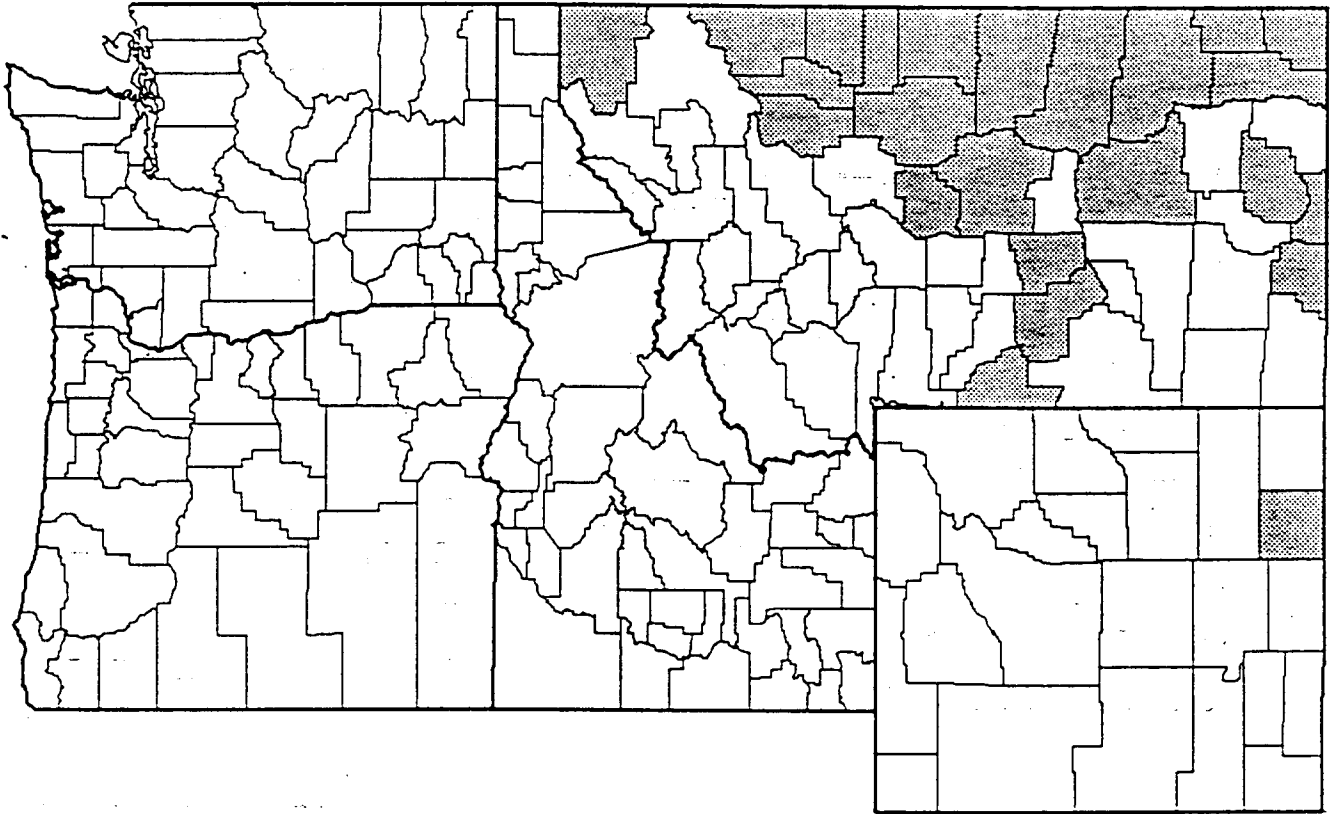


Lolium multiflorum INCREASE IN NORTHWEST STATES

$$y = 1.000000 + 0.106171 * x^1 - 0.001387 * x^2$$

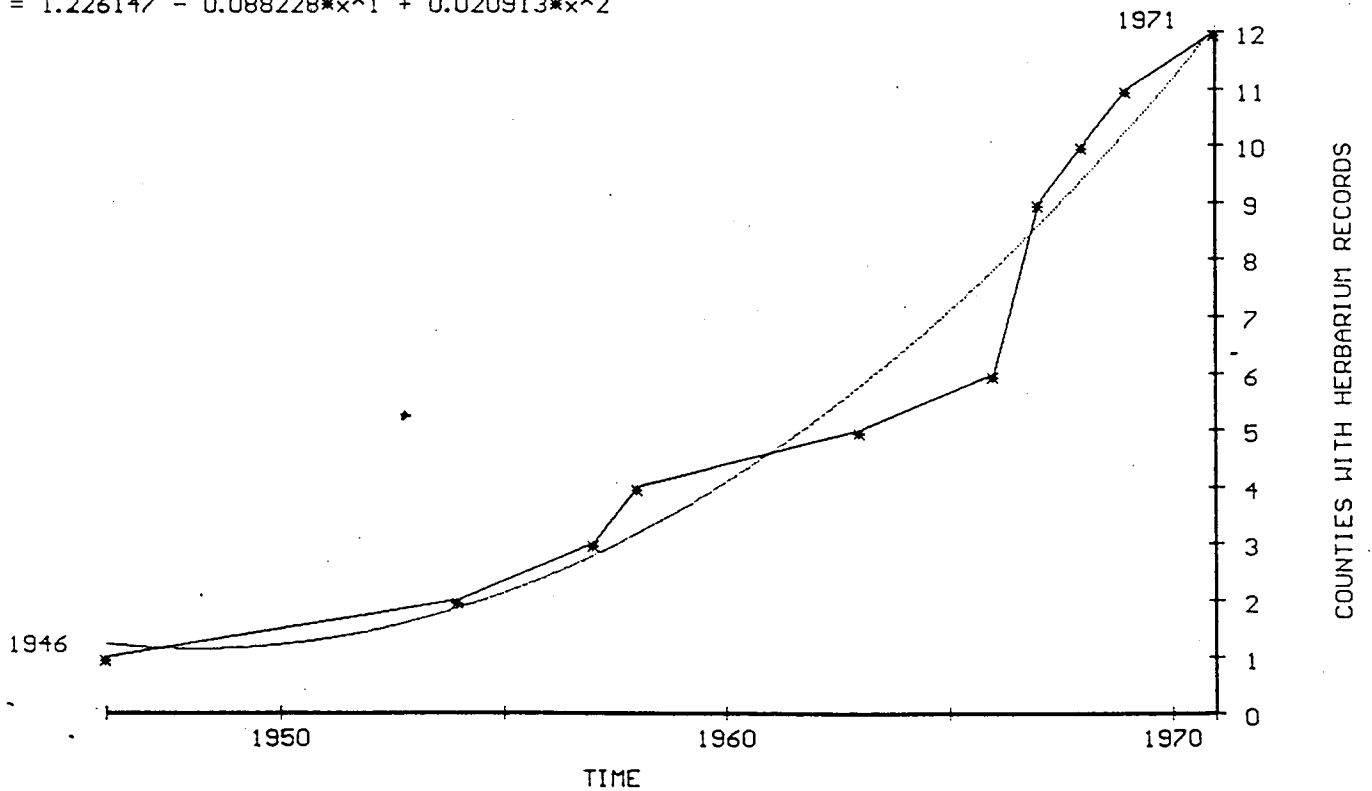


Counties reporting the exotic *Lolium persicum* (Persian darnel), 1875-1993.

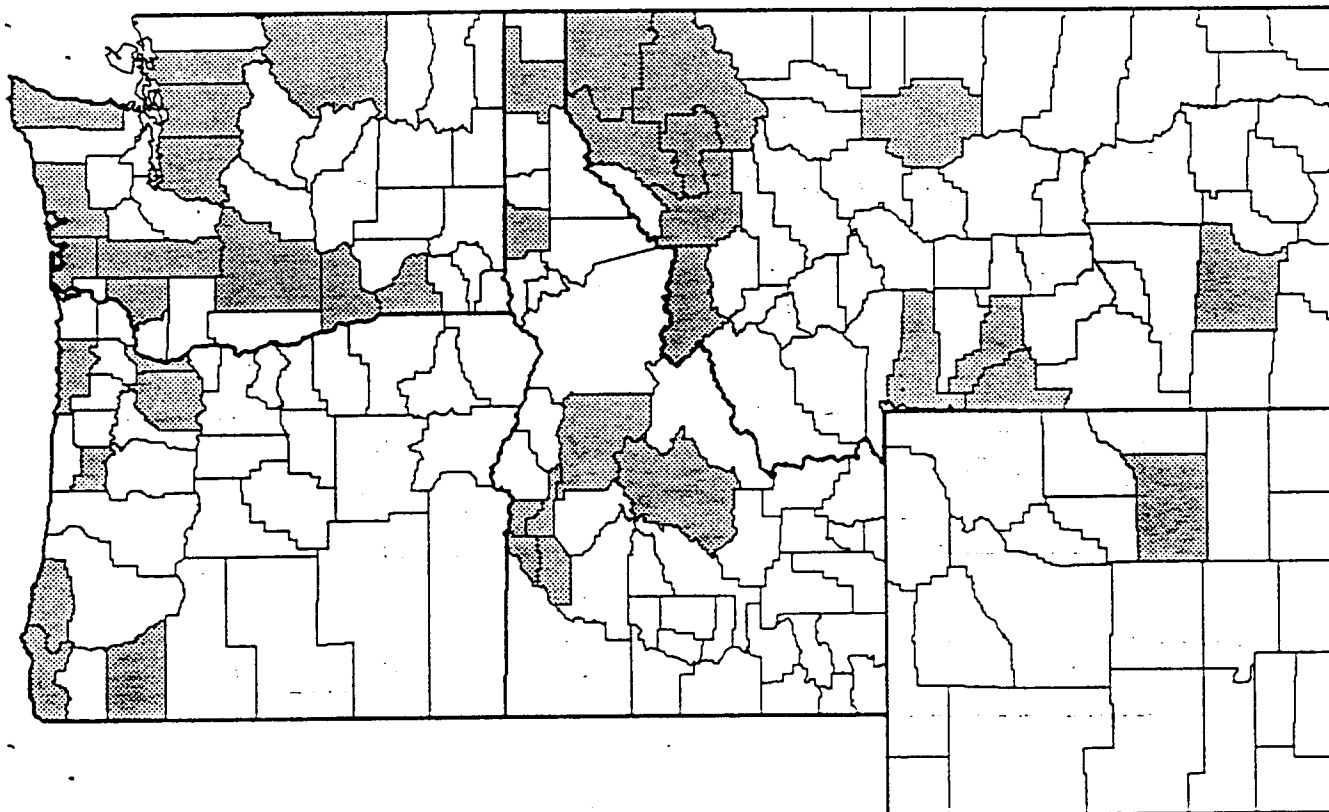


Lolium persicum INCREASE IN NORTHWEST STATES

$$y = 1.226147 - 0.088228 * x^1 + 0.020913 * x^2$$

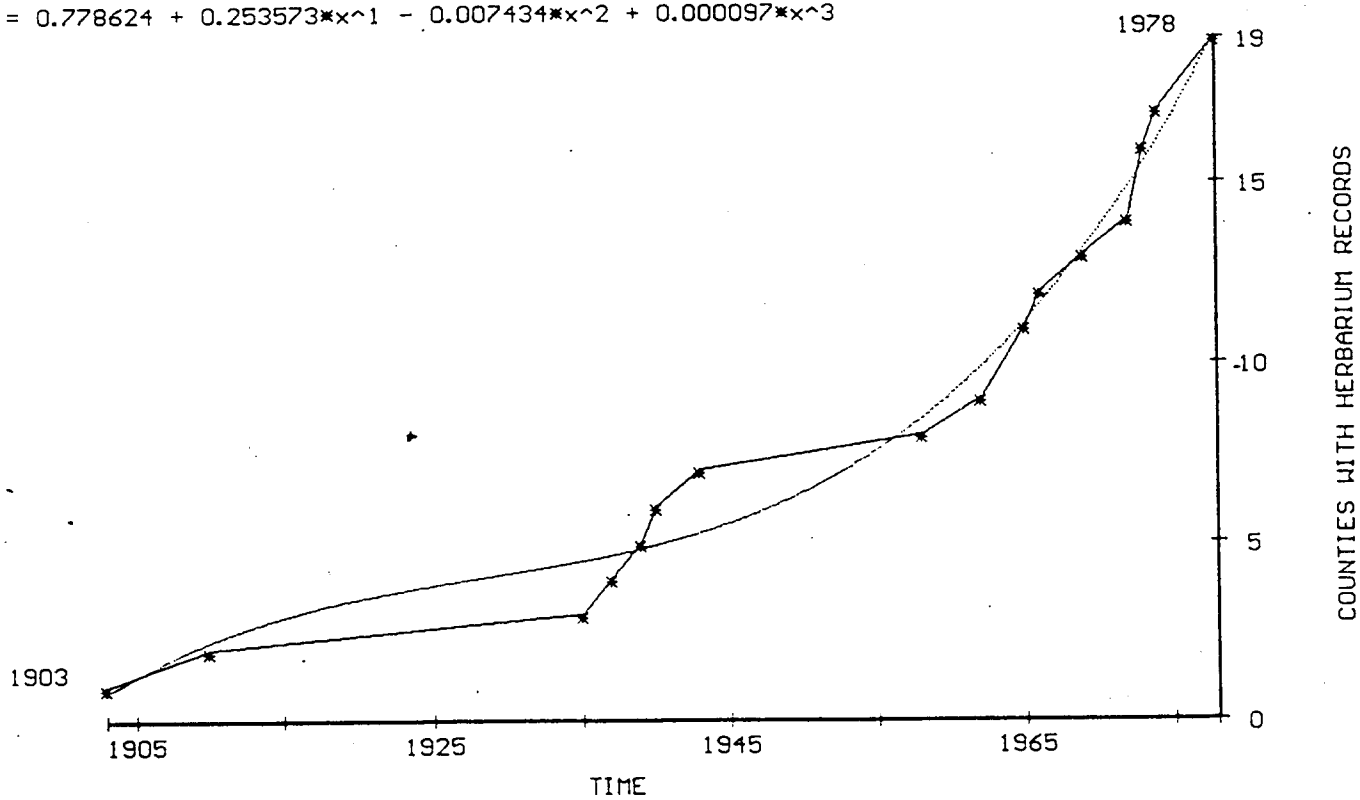


Counties reporting the exotic *Lotus corniculatus* (birdsfoot trefoil), 1875-1994.

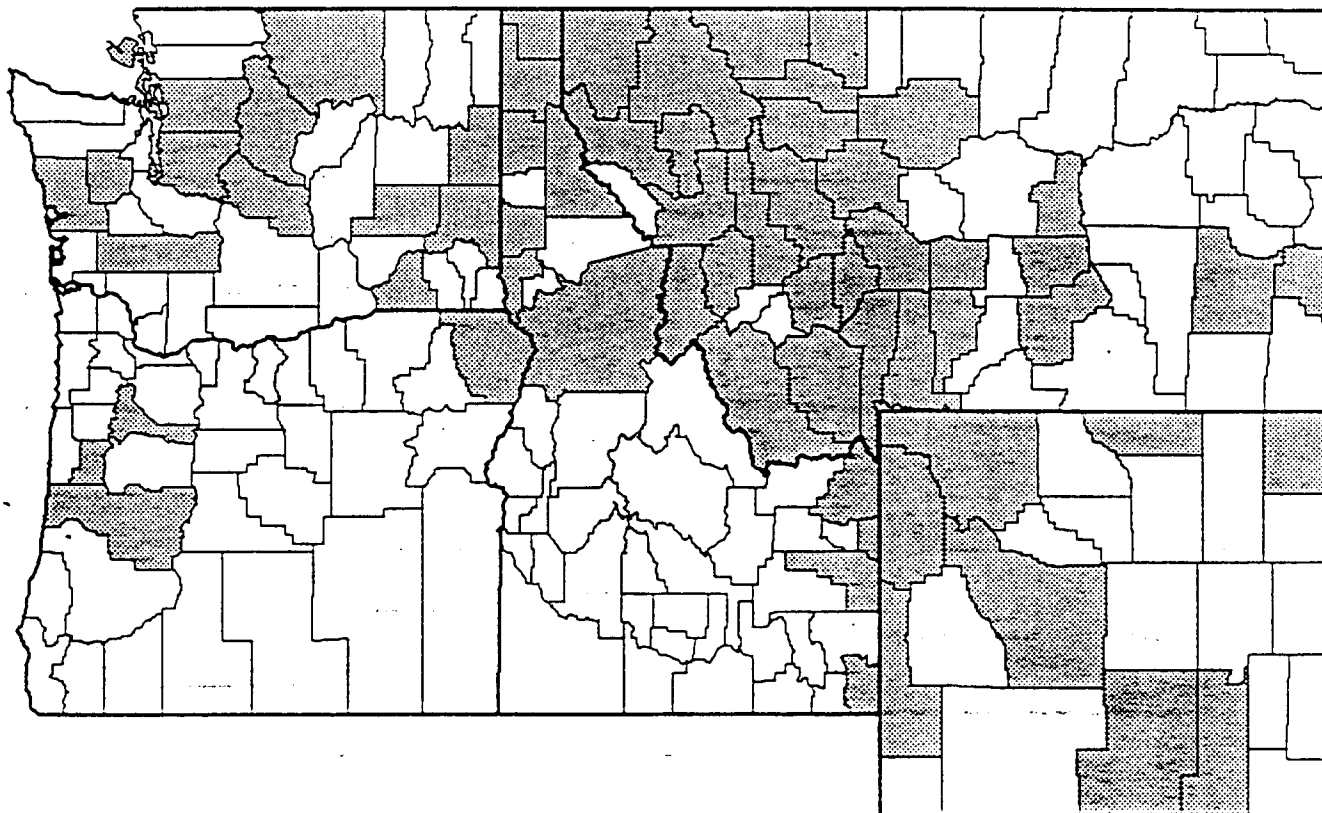


Lotus corniculatus INCREASE IN NORTHWEST STATES

$$y = 0.778624 + 0.253573 * x^1 - 0.007434 * x^2 + 0.000097 * x^3$$

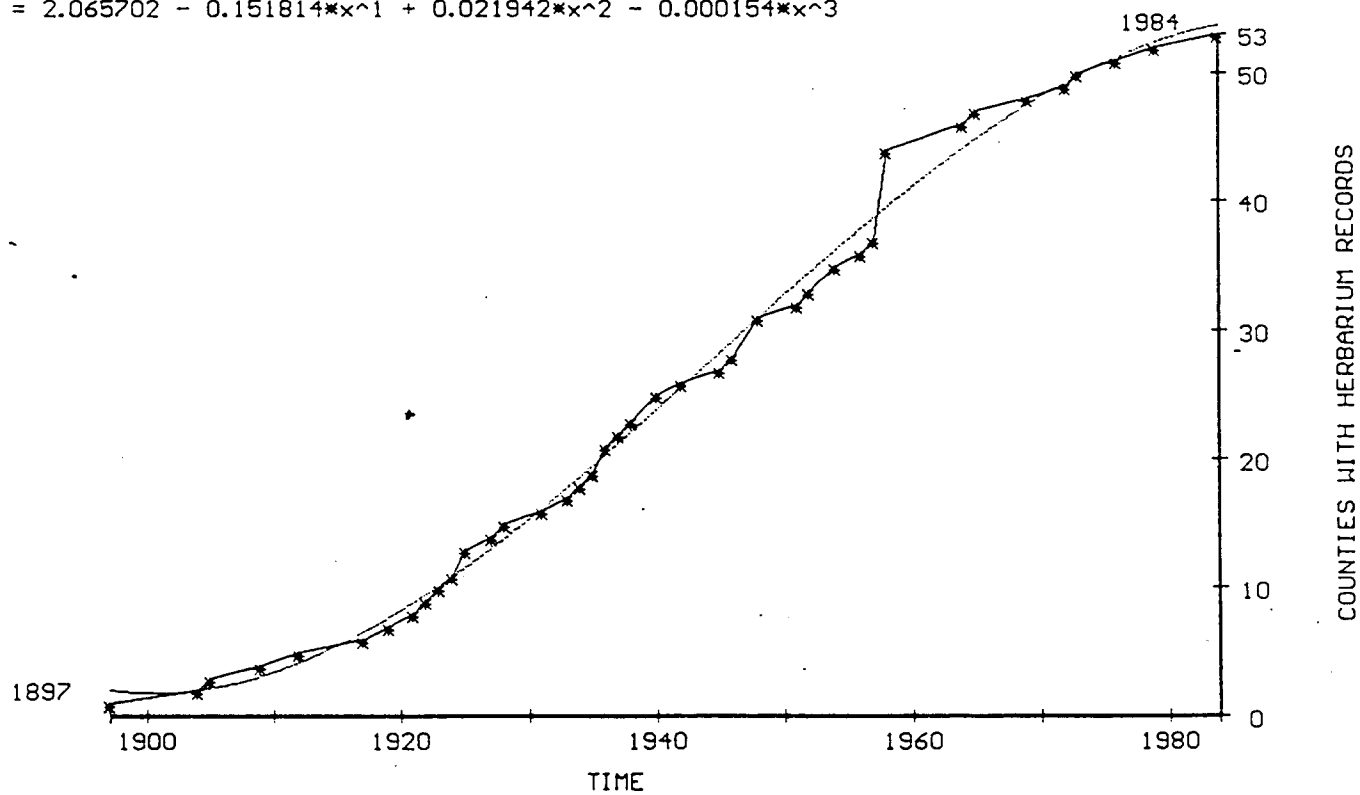


Counties reporting the exotic *Lychnis alba* (white campion), 1875-1993.

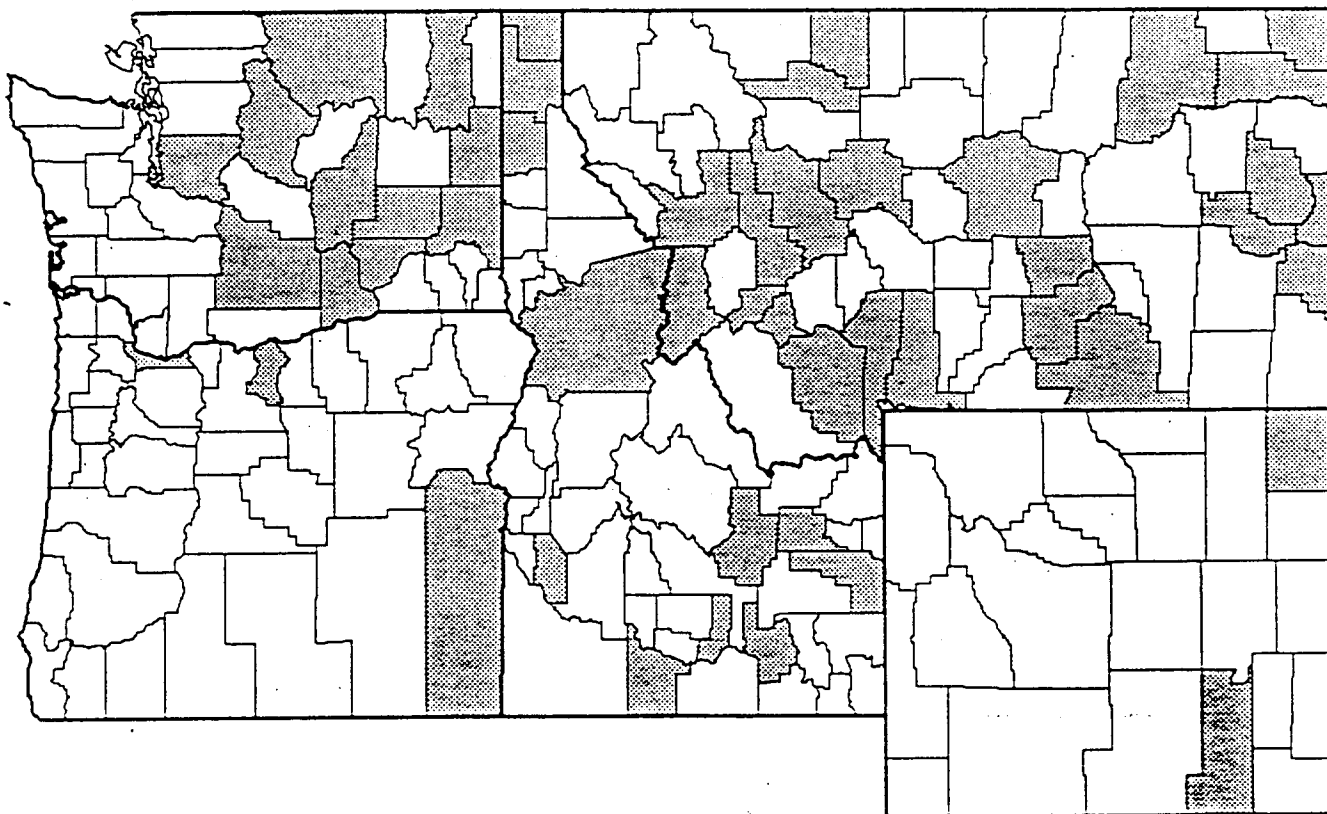


Lychnis alba INCREASE IN NORTHWEST STATES

$$y = 2.065702 - 0.151814 \times x^1 + 0.021942 \times x^2 - 0.000154 \times x^3$$

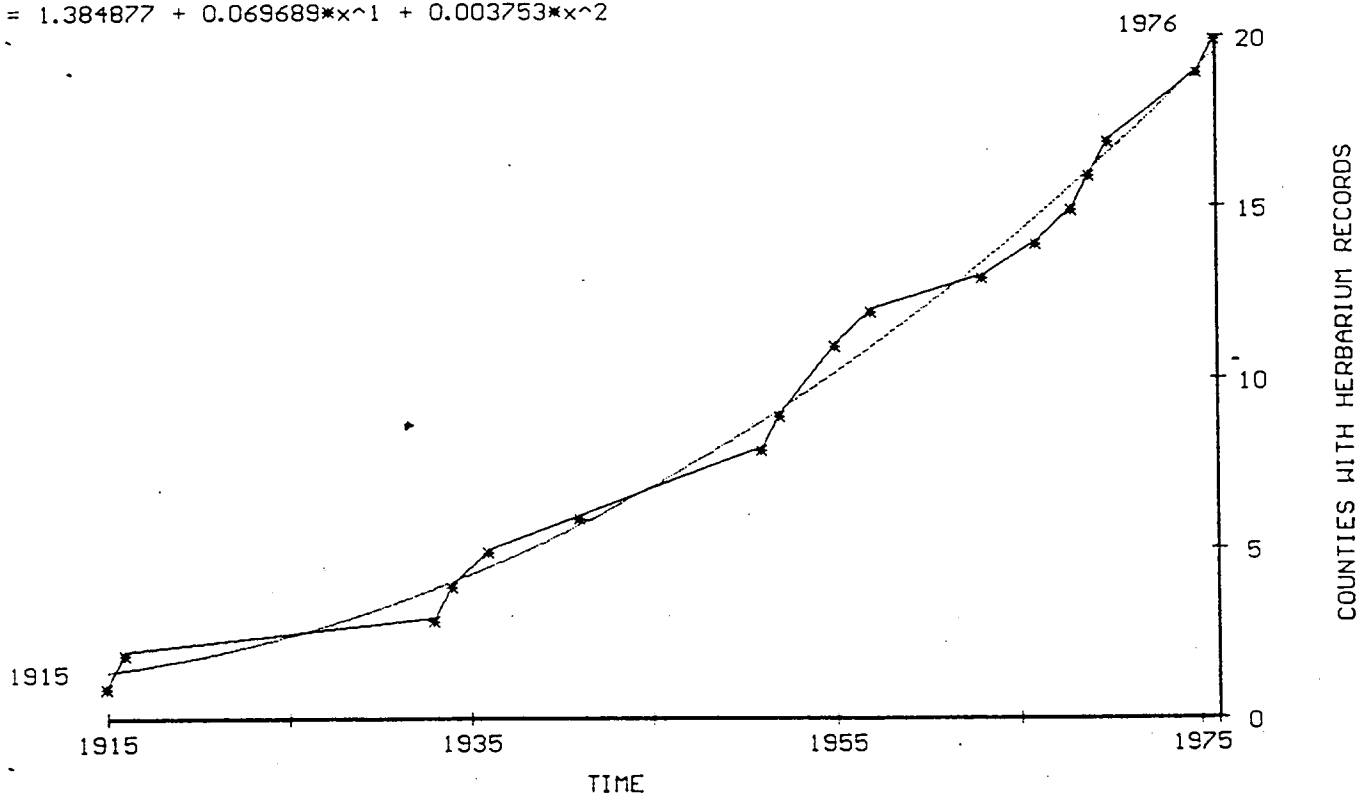


Counties reporting the exotic *Lycium halimifolium* (matrimonyvine), 1875-1994.

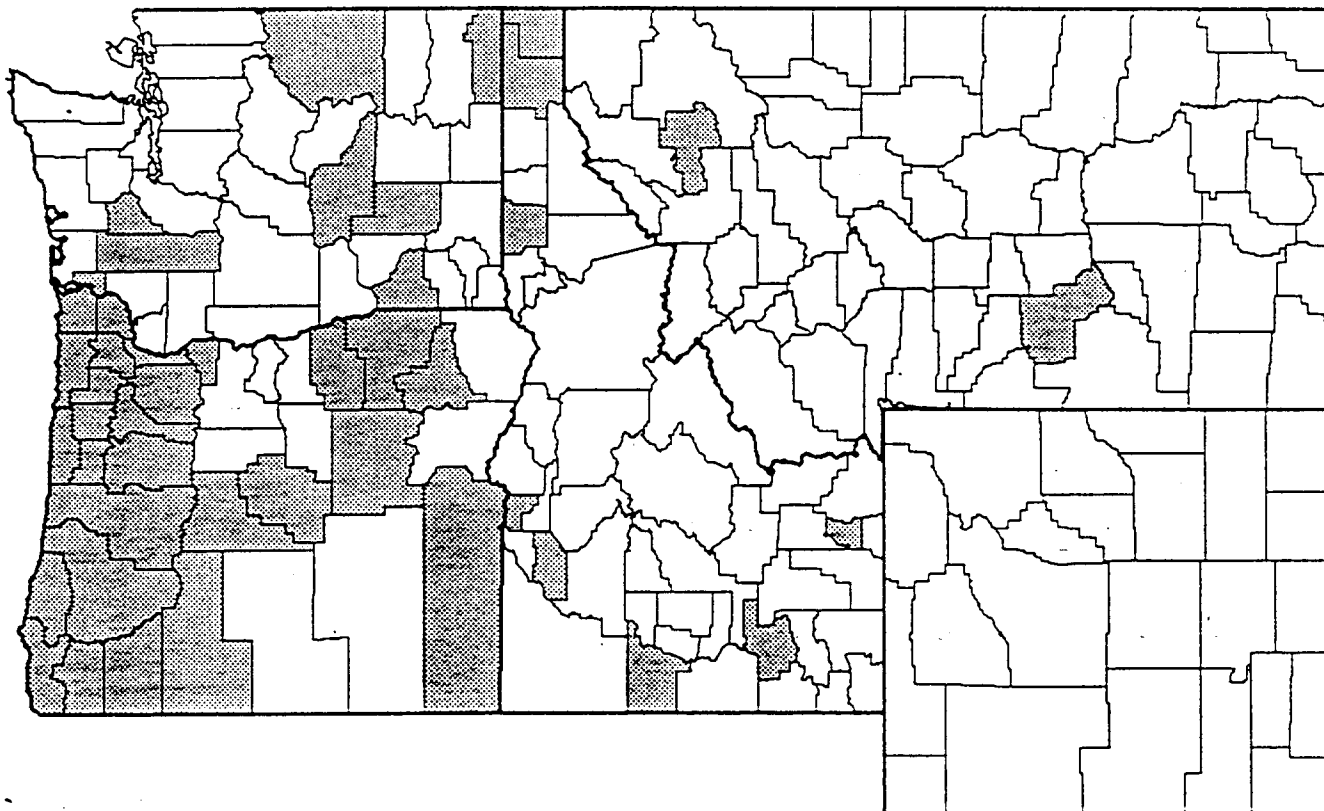


Lycium halimifolium INCREASE IN NORTHWEST STATES

$$y = 1.384877 + 0.069689 \times x^1 + 0.003753 \times x^2$$

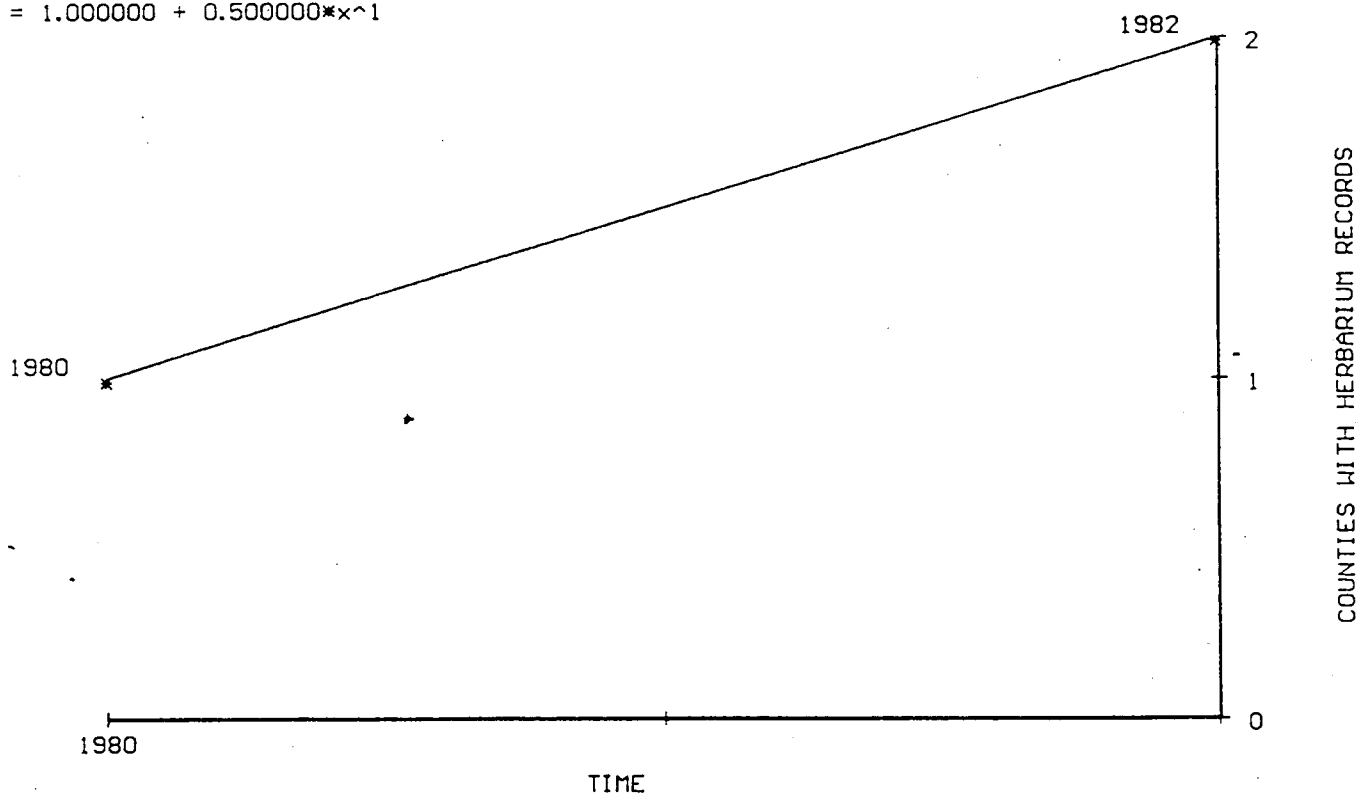


Counties reporting the exotic *Lythrum salicaria* (purple loosestrife), 1875-1994.

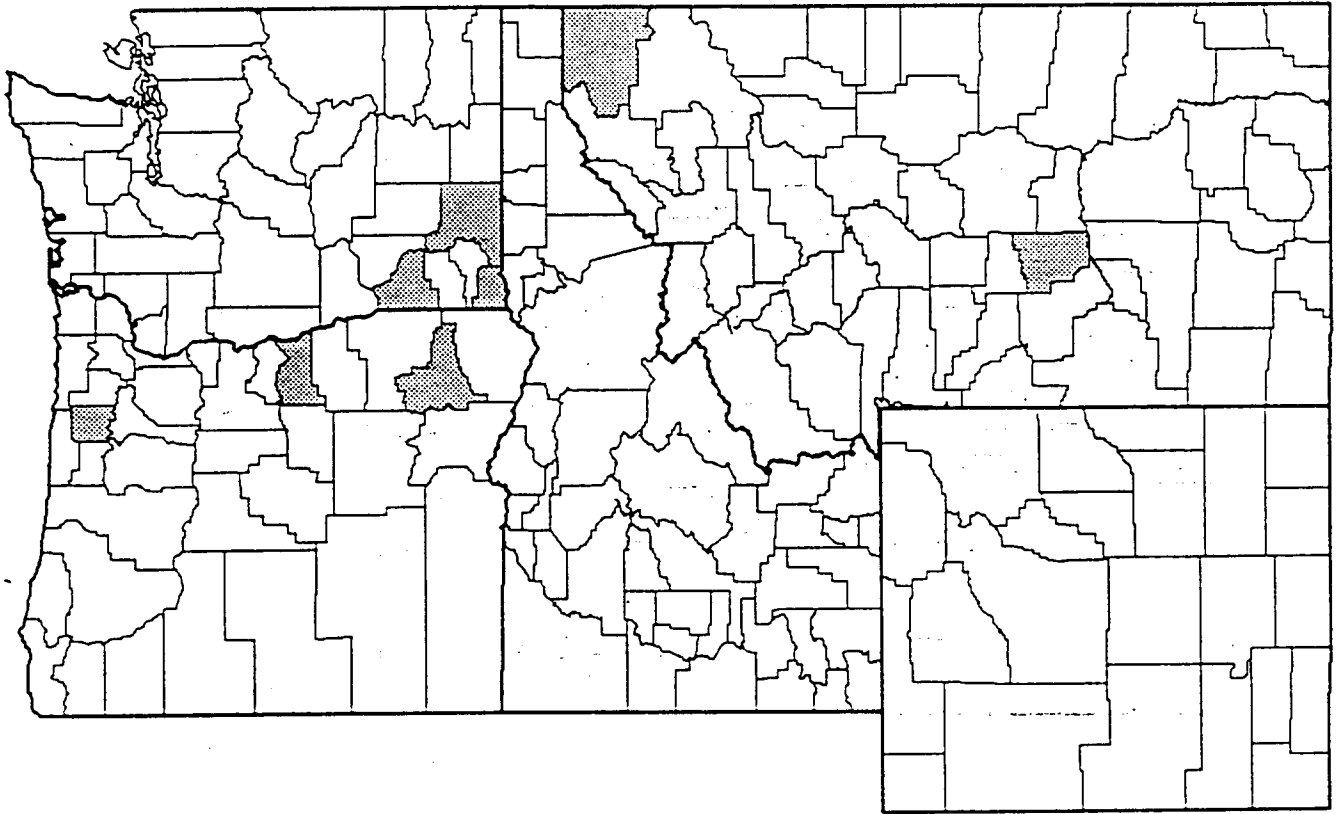


Lythrum salicaria INCREASE IN NORTHWEST STATES

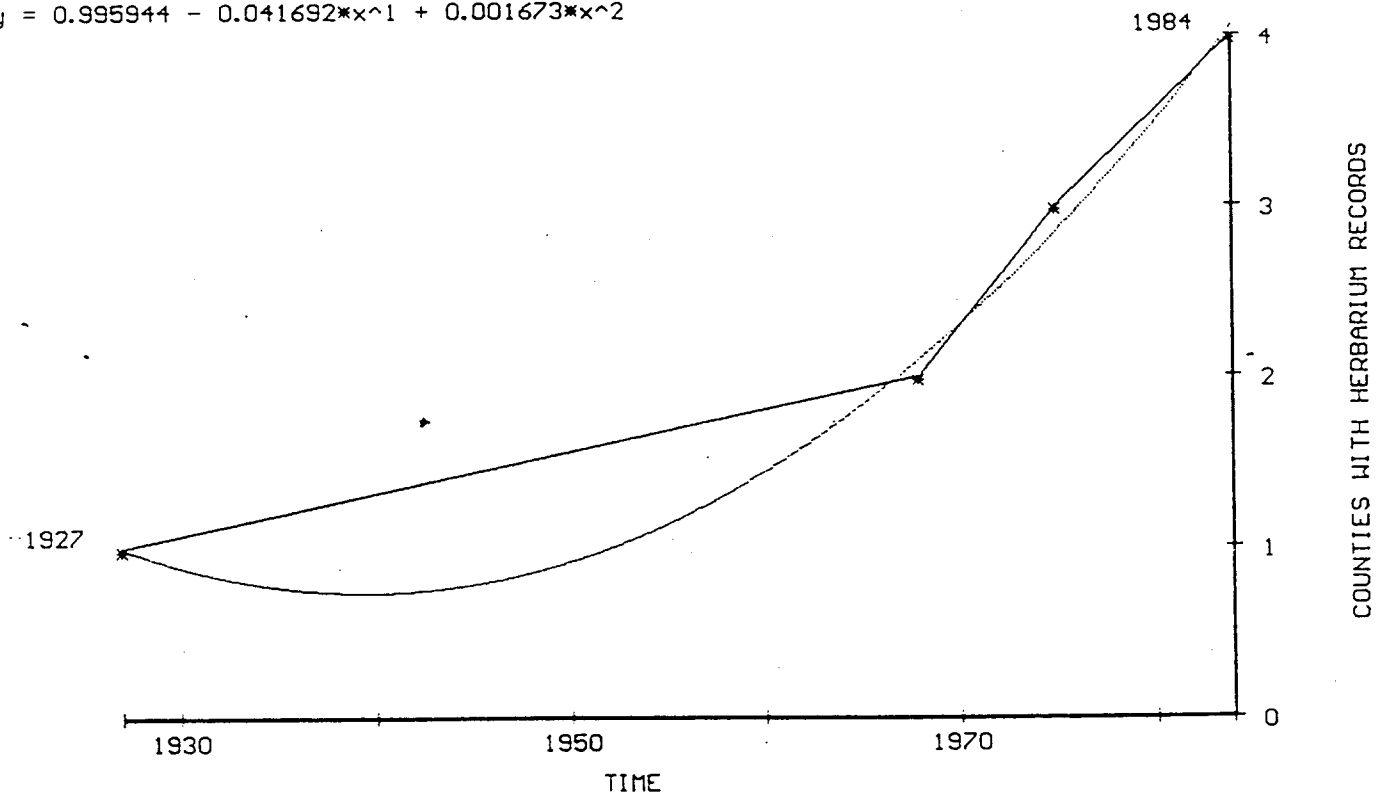
$$y = 1.000000 + 0.500000 * x^1$$



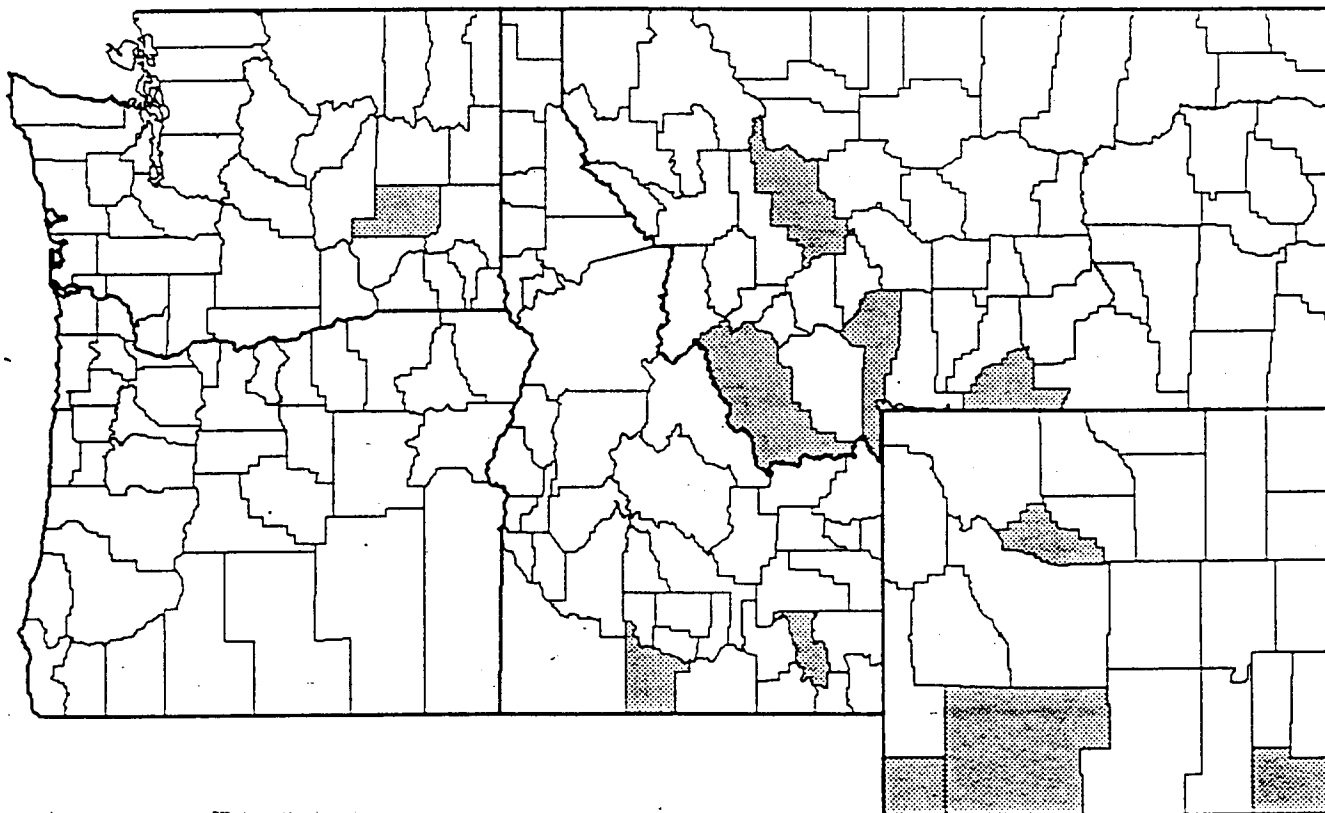
Counties reporting the exotic *Maclura pomifera* (osage orange), 1875-1992.



Maclura pomifera INCREASE IN NORTHWEST STATES
 $y = 0.995944 - 0.041692 * x^1 + 0.001673 * x^2$

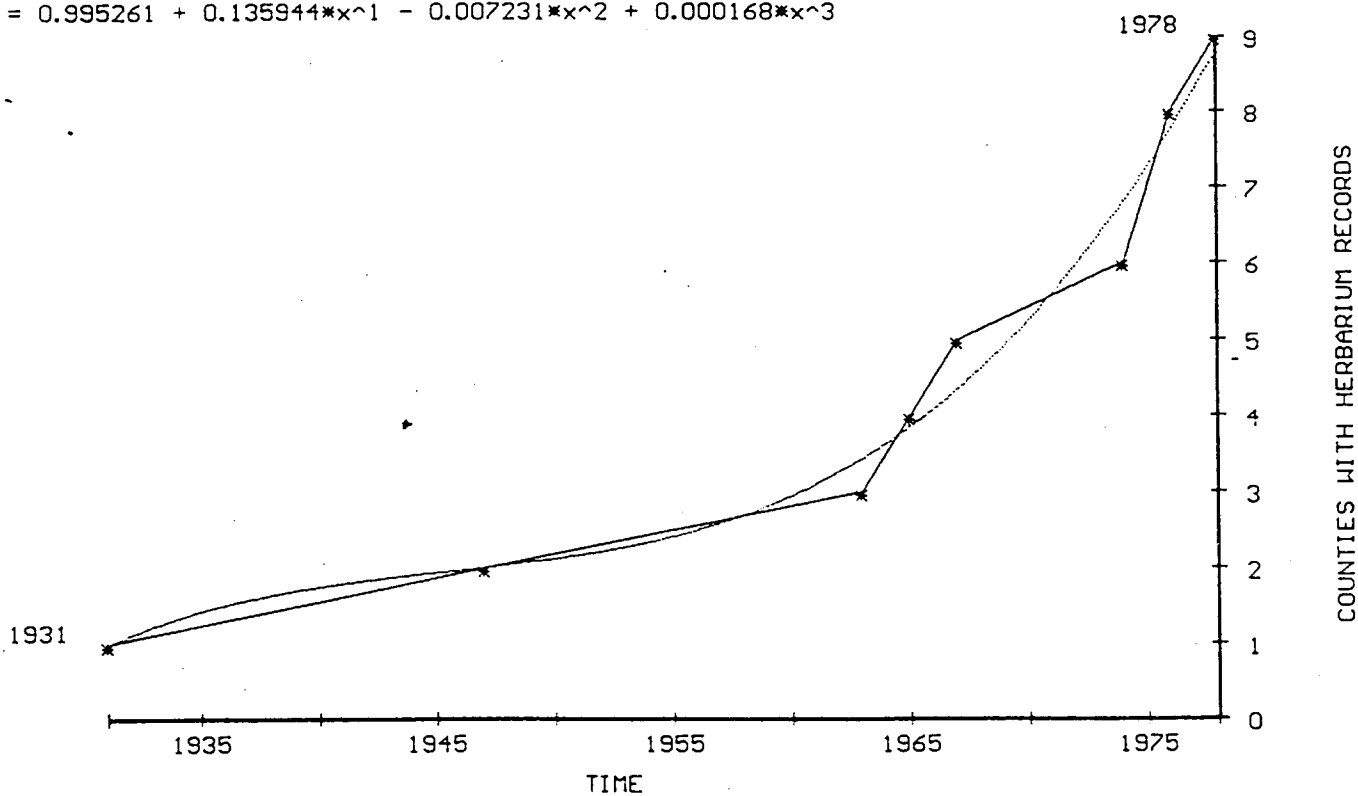


Counties reporting the exotic *Malcolmia africana* (malcolm stock), 1875-1987.

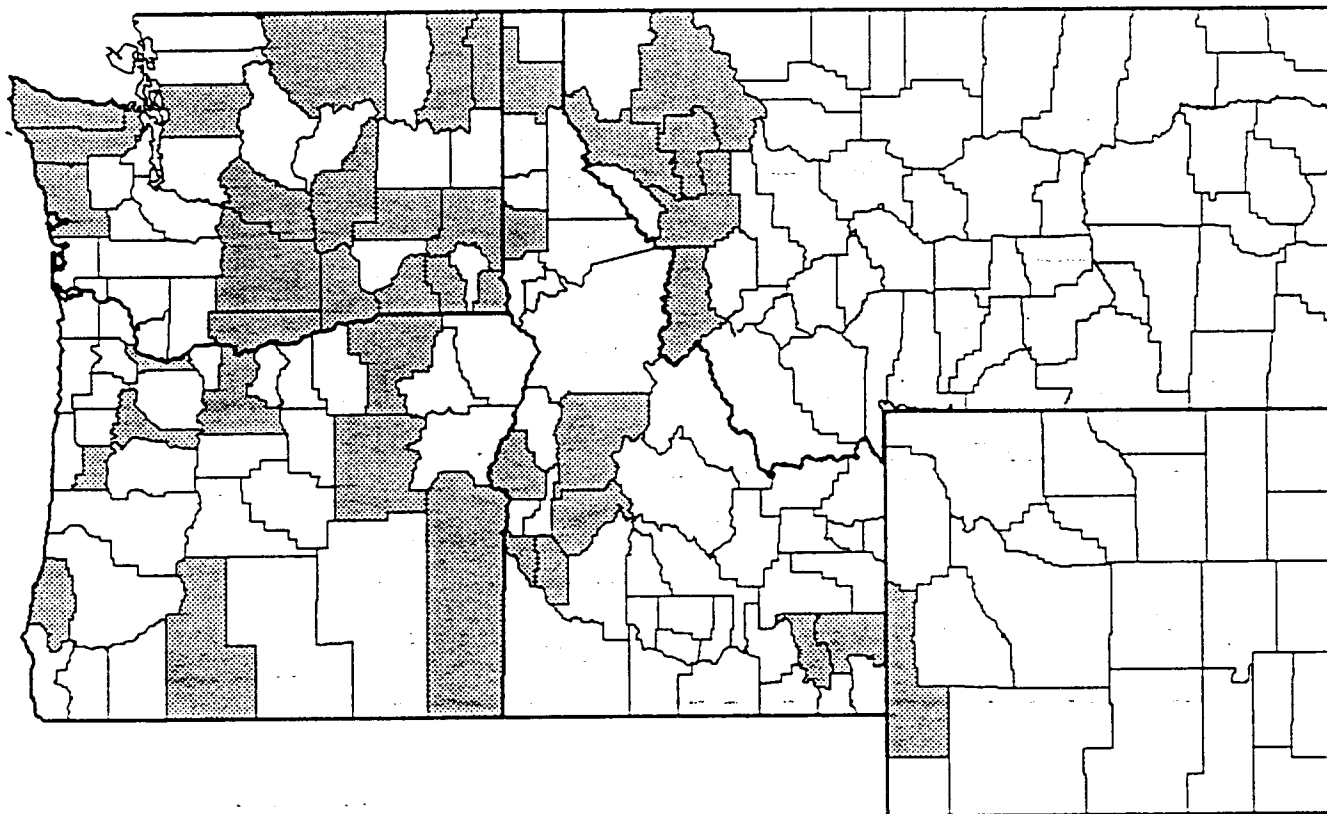


Malcolmia africana INCREASE IN NORTHWEST STATES

$$y = 0.995261 + 0.135944 * x^1 - 0.007231 * x^2 + 0.000168 * x^3$$

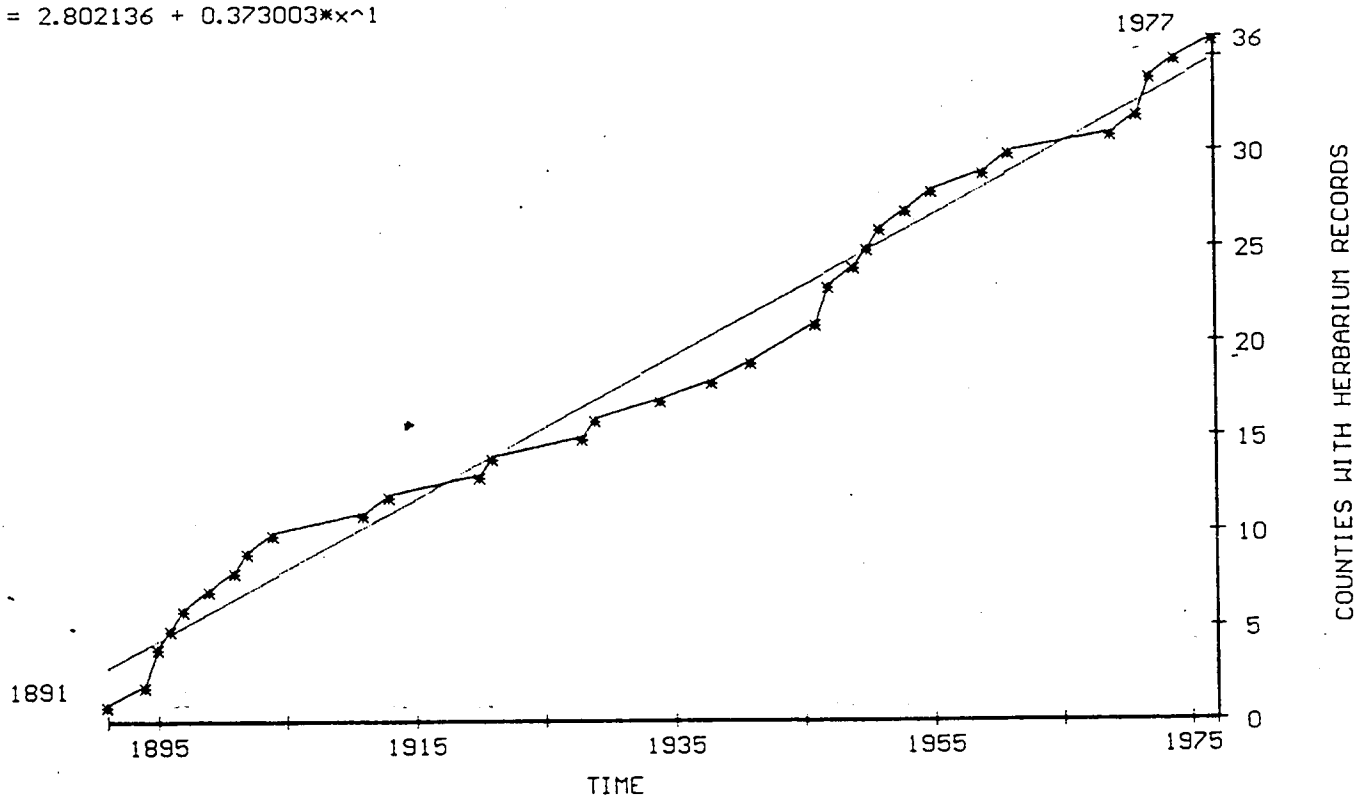


Counties reporting the exotic *Malva neglecta* (common mallow), 1875-1993.

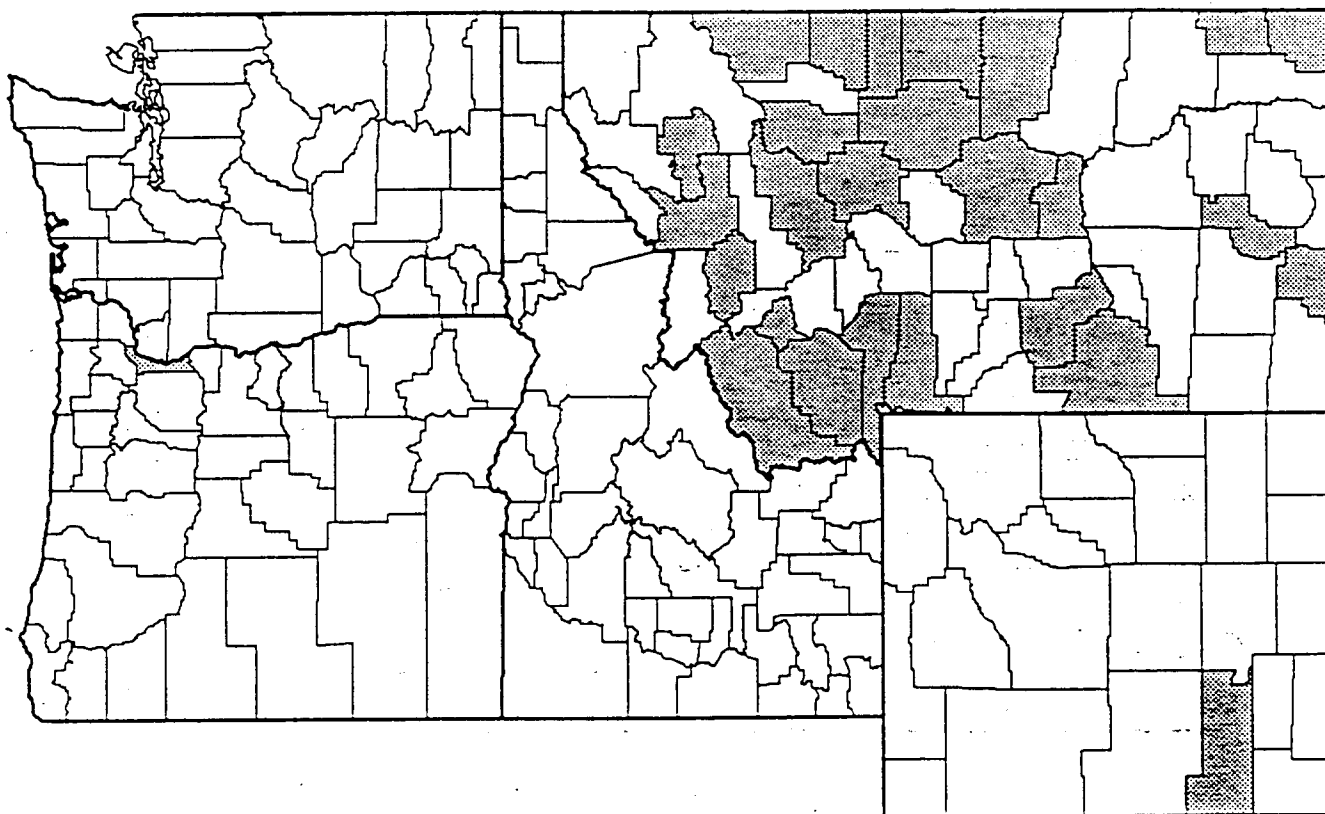


Malva neglecta INCREASE IN NORTHWEST STATES

$$y = 2.802136 + 0.373003 * x^1$$



Counties reporting the exotic *Malva parviflora* (little mallow), 1875-1980.



Malva parviflora INCREASE IN NORTHWEST STATES

$$y = -0.105945 + 0.555744 * x^1 - 0.018656 * x^2 + 0.000205 * x^3$$

