A decorative graphic consisting of a horizontal bar with a wood grain texture. The top and bottom sections are light-colored wood, while the middle section is dark with a Bengal cat pattern. A white rectangular box with a thin black border is centered in the dark section, containing the text "Bengal Breed Seminar, 2016".

Bengal Breed Seminar, 2016

Presented by the TICA Bengal Breed Committee (2015-2018) for the illustration and understanding of the Bengal Cat Standard, Bengal History, Bengal Cat Handling and Bengal Cat Genetic Inheritance

2016 Bengal Breed Seminar

For Breeders, Enthusiasts, Exhibitors and Evaluators of the Bengal Cat



OCELOT—A Beautiful Unique Pet
The Ocelot is a beautiful and unique pet. It is a domesticated cat with a wild appearance. It is a mix of a domestic cat and a wild cat. It is a mix of a domestic cat and a wild cat. It is a mix of a domestic cat and a wild cat.

The devotees of the Bengal Cat have undertaken a consequential endeavor that has brought incredible joy, challenge, triumph and love to the world. Bengal Cat breeders are the most diverse and numerous of all feline enthusiasts – experience, geography and socio-economic background. Bengals are a mixture of all known feline possibilities – all colors, all patterns, hair lengths, body types and brand new *non-Felis sylvestris* derived genes. When Bengal Cats were accepted and developing no tests existed for any desirable or undesirable traits.

This breed was not found on an island nor a standard written for a few cats that already existed. The idea of the ideal Bengal Cat was an aspiration. The beauty of the Bengal Cat exists because of dedicated breeders.



Is the Bengal Cat breed distinctiveness valued enough by those seeking to appreciate, breed and evaluate Bengal Cats?

The world now has cats that seek human attention and affection wrapped in coats once caressed only through hunting or trapping. These cats have heads and bodies with exotic essence previously enjoyed in fantasies, by the very lucky or very rich. They are domestic cats in every sense of the word, that's amazing!



2016 Bengal Breed Seminar

What makes the Bengal Cat a unique breed now? ...in the future?
Why Breed them?

Historical & Multi- Cultural Appeal of Leopard



Vogue Magazine Editor in Leopard Cat Coat NY Fashion Week 2014



King Faisal of Greater Syria & Iraq w/ pet leopard, 1925 Baghdad



Vladimir Putin and Amur Leopard 2014



Kanye West in Leopard print jacket 2013



Zulu Ritual in South Africa 2004




Egyptian Tomb relief w/ pet leopard and leopard skins, Temple Beit el Wali, 1280 BCE



Pompeii Mural featuring spotted domestic cat 100 C. E.

Future considerations for hybrid cat breeds?

- Hybrid breeds are among the most popular cats in the world
- Many breeders mixing multiple breeds (2-3 species)
- How does this impact genetic testing and legal ownership?



William Murphy, PhD presented report at 2015 Tuff's Canine & Feline Genetics & Breeding Conference . What are the motivations and ramifications of "hybrid" breeds.

The reception to this idea and to these breeds was not positive by this group of mostly veterinarians - Hutcherson

2016 Bengal Breed Seminar

Why the words "Asian Leopard Cat" are NOT in the Standard

Initial Goal –

- Which Asian Leopard Cat? The species is highly variable in pattern, color, size and proportions



Which ALC subspecies is the ideal?



Asian Leopard Cat is not in the standard because they are highly diverse in general appearance and some zoologists and feline taxonomists divide them into as many as four (4) separate species. Genetic analysis

validates the idea. William Murphy PhD, Brian Davis PhD, Jay Bangle, Anthony Hutcherson 2016

- Jean Mill sought to create a miniature leopard, harvesting only the pattern & contrast from the Asian Leopard Cat
- Other Early Breeders & Exhibitors wanted Asian Leopard Cat replicas
- Could/Should law enforcement be able to easily distinguish between a domestic Bengal Cat and an Asian Leopard Cat (or other non-domestic species) with a glance?

2016 Bengal Breed Seminar

Why the words "Asian Leopard Cat" are NOT in the Standard

Initial Goal –

- Jean Mill sought to create a miniature leopard, harvesting only the pattern & contrast from the Asian Leopard Cat.
 - Other early breeders wanted an Asian Leopard Cat replica (Kent, Donoyan)
 - Gloria Stephens, Von Pilcher, Solvig Pfluger and Jean Mill settled on writing the standard around the F1 (Asian Leopard Cat X Domestic Shorthair) as the ideal
-
- **Conservation** – Asian Leopard Cats are classified as Endangered by the US.
 - **Law** – Would law enforcement/animal control/zoo/veterinarians tell them apart?
 - **Politics** – How do political bodies define "what is a domestic cat"?
 - **Science** - How is science and genetics affecting the determination of species and the ability to select and traits?



Leslie Lyons, PhD, Greg Barsh PhD, Chris Kaelin PhD discussing Bengals at Genomics Conference



New Asian Leopard Cat & Sable Coat for sale (2016)



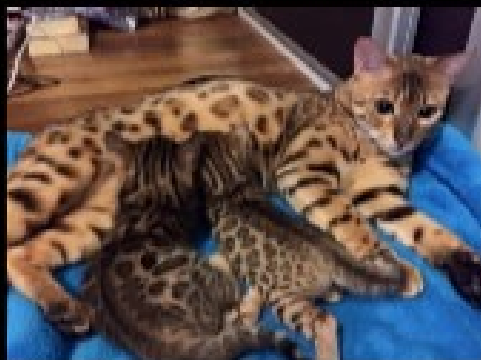
Dossier on Bengal Cats to oppose making all Bengal Cats illegal in Belgium 2016

2016 Bengal Breed Seminar

Who is responsible for the Bengal Cat breed now & into the future?

Breeders

- Personal preferences
- What they can place/sell
- What inspired them to breed in the first place
- What is appreciated by fellow breeders
- What wins at shows brings them acclaim/3rd party appreciation
- Awareness, acceptance, validity and application of emerging insights



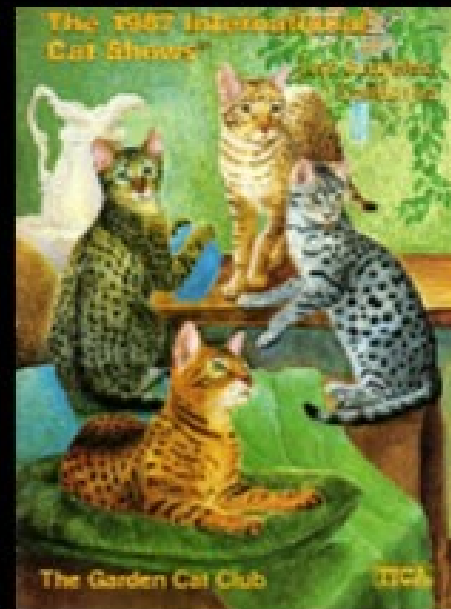
Registry

- Definition of a breed
- Rules for acceptance of new color/hair length/pattern/head structure
- Value from publicity, registration, entries, volunteers
- Competition from other registries for \$, members, clubs, attention
- What members, clubs, board of directors allow
- Awareness, acceptance, validity and application of emerging insights



Judges

- What their personal preferences & history suggest
- How they accept and apply registry rules to their choices
- Awareness, acceptance, validity and application of emerging insights



Public

- Their personal preference
- How the breed is readily distinguished from variation of random bred populations (internationally)
- Depiction in popular culture (media, art, business)
- Cultural references
- Historical metaphors



2016 Bengal Breed Seminar

Please **DO NOT** Call Bengal Cats a Hybrid Breed

Bengal Cats are a Category 1 (one) Breed in TICA –

- Only Bengal Cats bred to Bengal Cats produce Bengal Cats
- Asian Leopard Cats *Prionailurus bengalensis* is **NOT** an allowable outcross for Bengal Cats. ALC X domestic cats of any breed (including Bengal Cats) creates an F1 Foundation Cat
- TICA Registration Rules Define Bengal Cats as : 33.2.2 Domestic x Non-Domestic Source Species Hybrid Breed - A breed being developed by means of deliberate foundation crosses between domestic cats and a single non-domestic source species. The domestic cats used must not have a structural mutation.



Please **DO** Call Bengal Cats

- a domestic breed developed from Domestic X Non-Domestic Cat Hybrids
- Hybrid incorrectly infers Wild Cat (Asian Leopard Cat) X domestic = Bengal Cat



Ramifications

Some municipal, US State and national laws restrict or prohibit hybrids. Incorrect use of terminology when judging, on websites etc. can result in confusion of what a Bengal Cat is to the law, science and public. That confusion can lead to domestic Bengal Cats being prohibited and made illegal.

2016 Bengal Breed Seminar

Where is the Wild look?

The Bengal Cat Breed Committee was conflicted?

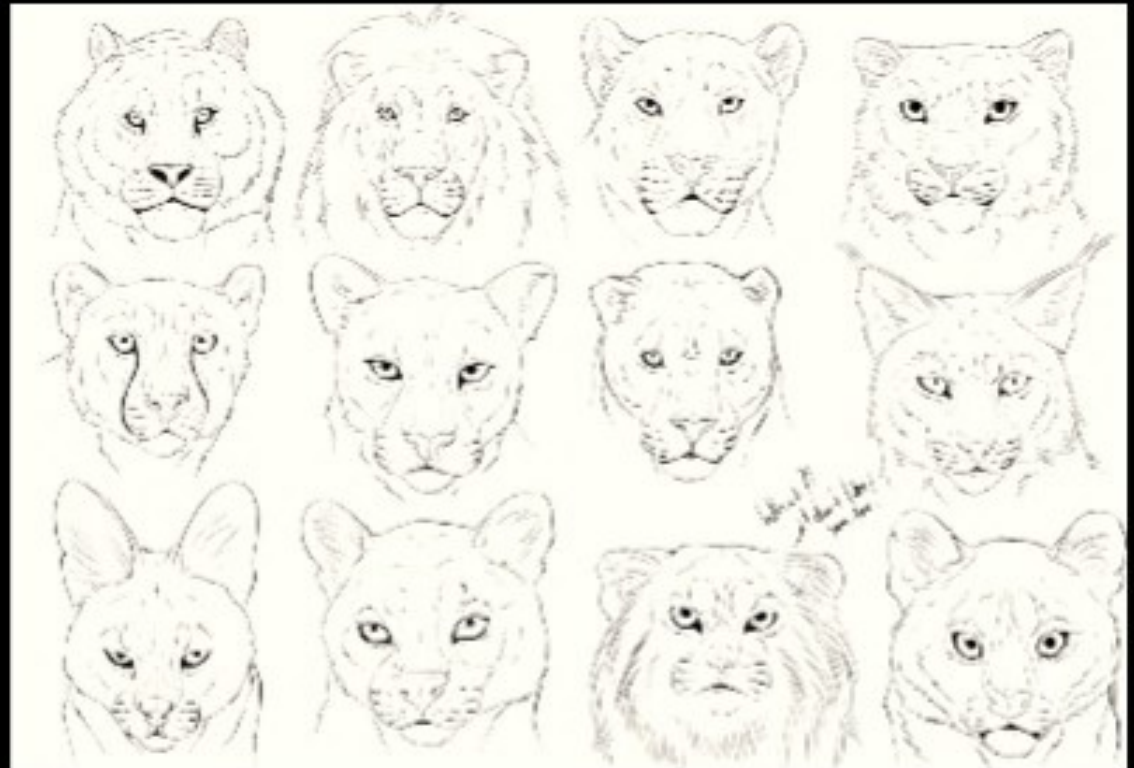
Show Non-Domestic Cats (wild) to demonstrate traits to breeders & judges who don't look at them often.

Do NOT show Non-Domestic Cats (wild) so breeders and judges can SEE the ideal traits already in the domestic Bengal population.



2016 Bengal Breed Seminar

What is the Wild look?

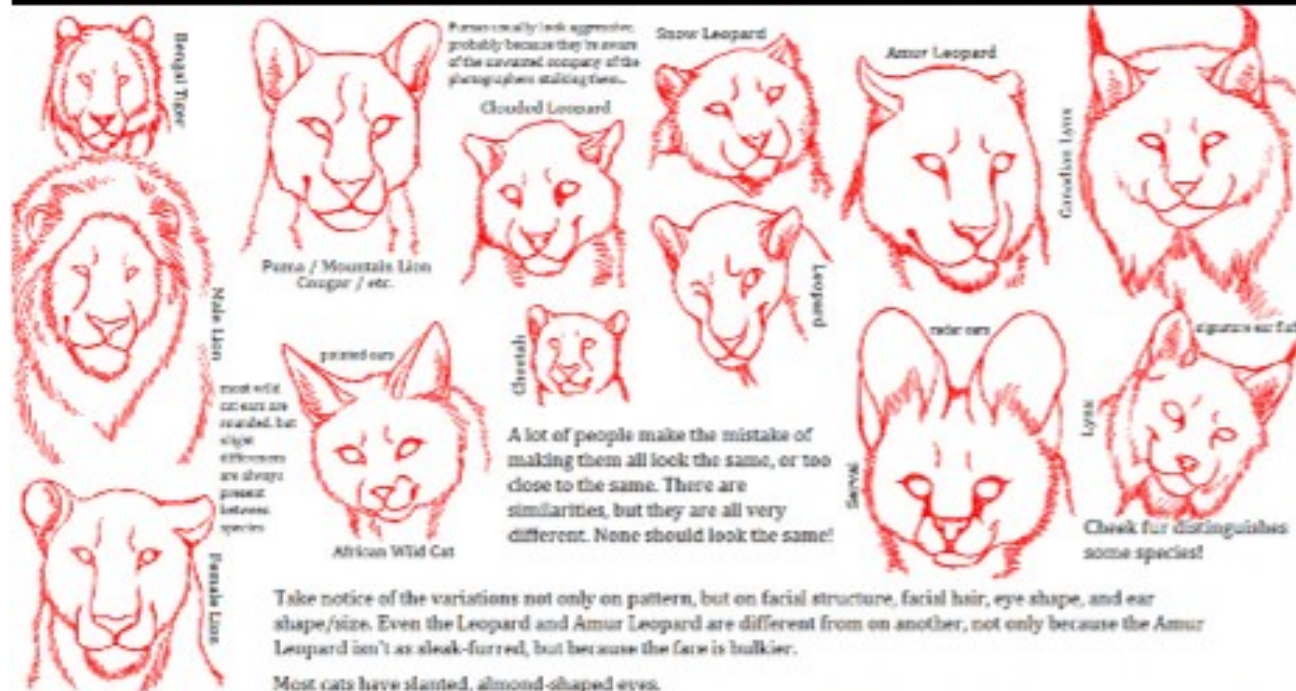


Artist sketches depict differences in "wild" looks.

Used with permission (Livanas 2015 above, Robin Leisens 2014, left)

2016 Bengal Breed Seminar

What is the Wild look?

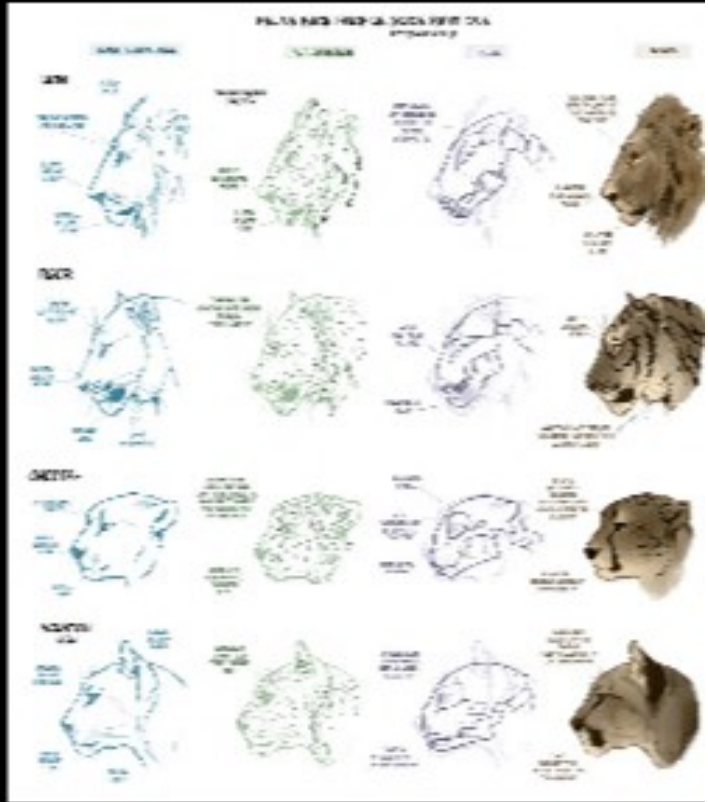


Felines usually look aggressive, probably because they're aware of the savannah company of the photographer standing there.

A lot of people make the mistake of making them all look the same, or too close to the same. There are similarities, but they are all very different. None should look the same!

Take notice of the variations not only on pattern, but on facial structure, facial hair, eye shape, and ear shape/size. Even the Leopard and Amur Leopard are different from one another, not only because the Amur Leopard isn't as sleek-furred, but because the face is bulkier.

Most cats have slanted, almond-shaped eyes.



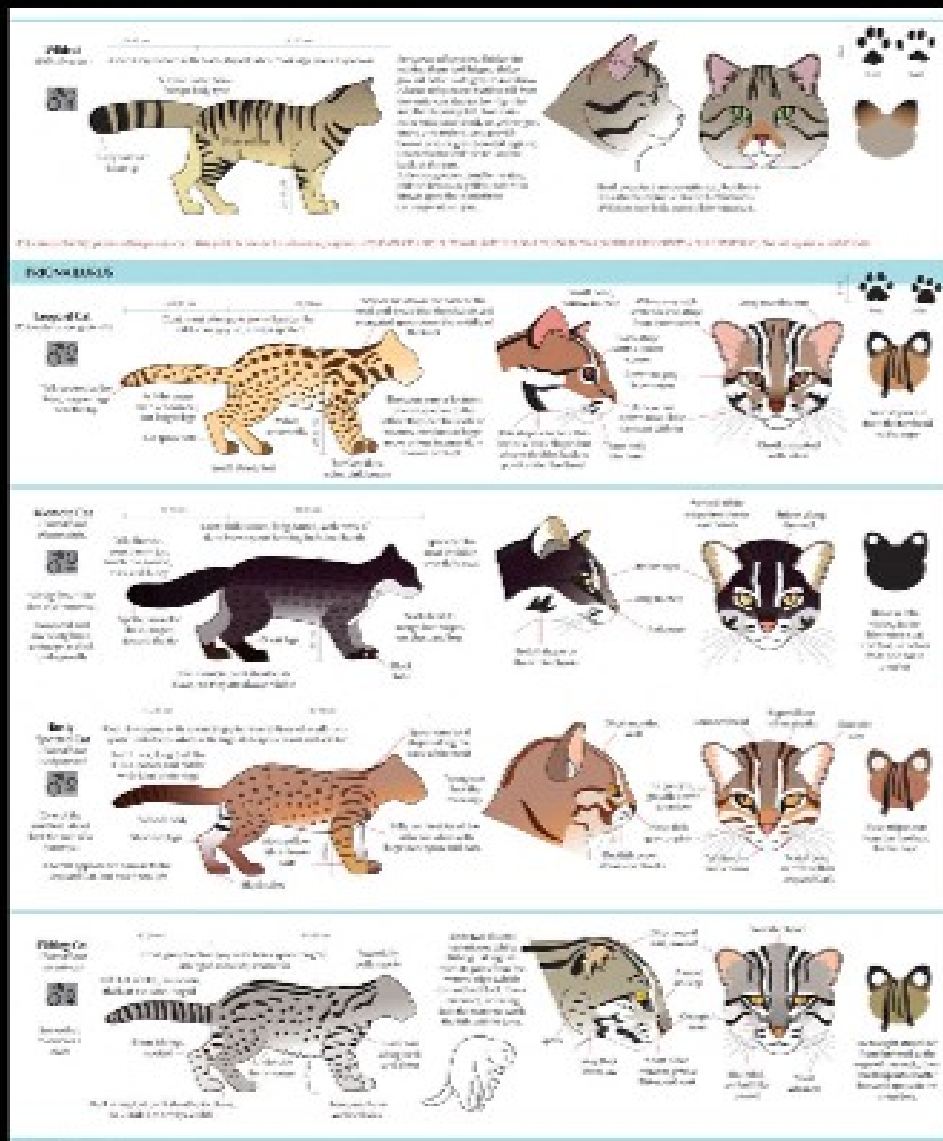
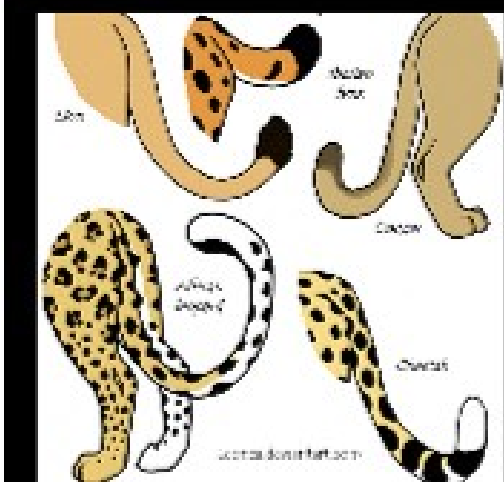
Also remember that felines, no matter the species, have thick muzzles and different noses than canines, usually wavy at the top. Their muzzles, long or short, are always sort of bulky, but the lower jaw is smaller and mostly fur if it appears to distend downward a lot.

Artist sketches depict differences in "wild" looks. Used with permission (CarmannMM-Dirda 2012 above, Devin Kurtz to & bottom right)



2016 Bengal Breed Seminar

What is the Wild look? Beyond heads



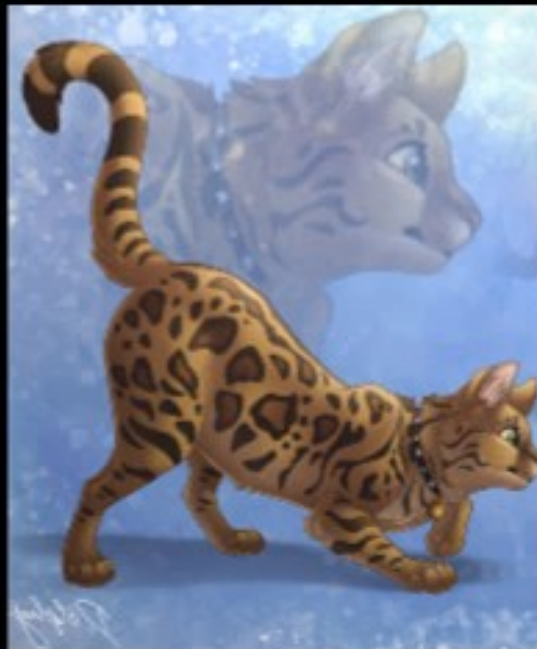
Artist sketches depict differences in "wild" looks. Used with permission by Joumana Medlej Guide to Cats

2016 Bengal Breed Seminar

Feline Comparison



What is the Wild look?

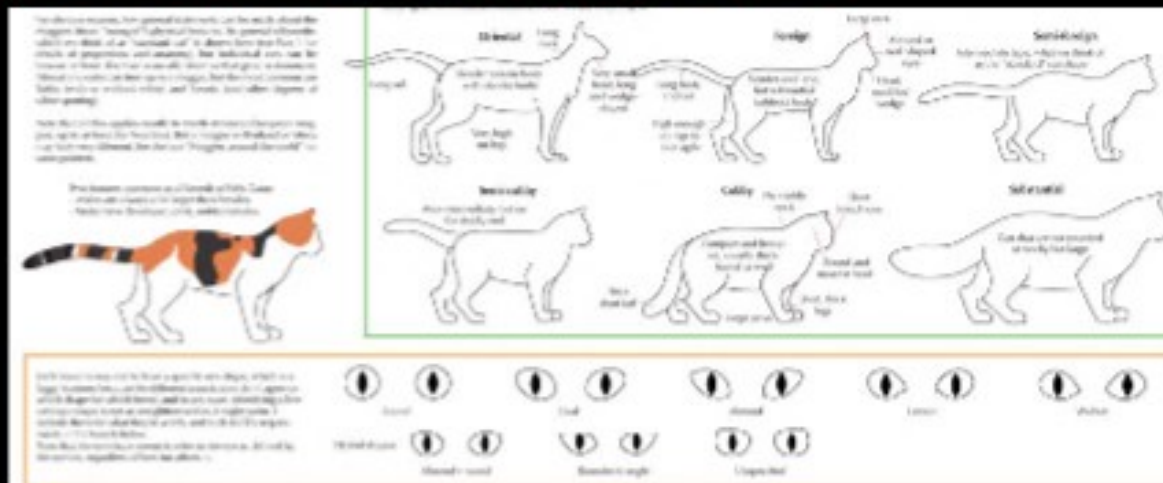


Artist depictions of "wild" looks.

Used with permission (Sindos 2015 chart, art Dolphy for Jungletrax 2015, middle)

2016 Bengal Breed Seminar

The Bengal Cat in the context of Domestic Cats looks ?



Joumana Medlej domestic cat bodies, 2012 above
 Breeds of Cats by Steinlen 1897 * Note Wild Cats of Siam are likely Asian Leopard Cat X domestic hybrids



2016 Bengal Breed Seminar

General Description



The goal of the Bengal breeding program is to create a domestic cat which has physical features distinctive to the small forest-dwelling wildcats, and with the loving, dependable temperament of the domestic cat.

2016 Bengal Breed Seminar

General Description

1. Asian Leopard Cat *Prionailurus bengalensis*
2. Ocelot *Leopardus pardalis*
3. Margay *Leopardus wiedii*
4. Marbled Cat *Pardofelis marmorata*
5. Oncilla (or Tigrina, Little Spotted Cat) *Leopardus oncifelis*

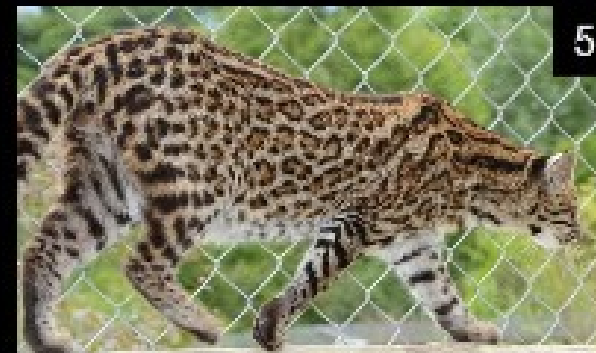
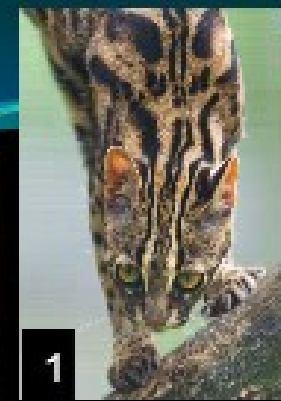
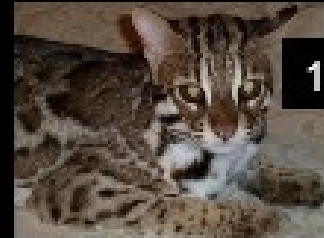


The goal of the Bengal breeding program is to create a domestic cat which has physical features distinctive to the **small forest-dwelling wildcats**, and with the loving, dependable temperament of the domestic cat.

2016 Bengal Breed Seminar

General Description

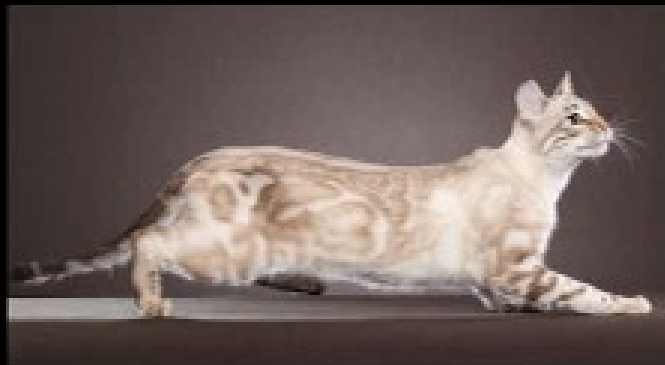
1. Asian Leopard Cat *Prionailurus bengalensis*
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5. Oncilla (or Tigrina, Little Spotted Cat) *Leopardus oncfelis*



The goal of the Bengal breeding program is to create a domestic cat which has physical features distinctive to the **small forest-dwelling wildcats**, and with the loving, dependable temperament of the domestic cat.

2016 Bengal Breed Seminar

General Description



Keeping this goal in mind, judges shall give special merit to those characteristics in the appearance of the Bengal which are distinct from those found in other domestic cat breeds. A Bengal cat is an athletic animal, alert to its surroundings; a friendly, curious, confident cat with strength, agility, balance and grace.

2016 Bengal Breed Seminar

General Description



It is a medium to large cat which exhibits a very muscular and solid build. Its wide nose with prominent whisker pads and large oval, almost round eyes in a slightly small head enhance the wild appearance and expressive nocturnal look. Its very slight, to nearly straight, concave profile and relatively short ears with wide base and rounded tips add to the Bengal's distinctive and unique appearance.

2016 Bengal Breed Seminar

General Description



The short, dense coat has a uniquely soft and silky feel. The coat may be glittered or not glittered, with neither type to be given preference. A thick, low-set, medium-length tail adds balance to the cat.

→ Identifies glitter

2016 Bengal Breed Seminar



HEAD35

Shape	6
Ears	6
Eyes	5
Chin	3
Muzzle	4
Nose	2
Profile	6
Neck	3



2016 Bengal Breed Seminar

Head.....35 points



Broad modified wedge with rounded contours. Longer than it is wide.

2016 Bengal Breed Seminar

Head (continued)

Shape..... 6 points

Correct



Incorrect



Slightly small in proportion to body, but not to be taken to extreme.

2016 Bengal Breed Seminar

Head (continued)

Shape..... 6 points

Correct



Incorrect



The skull behind the ears makes a gentle curve and flows into the neck.

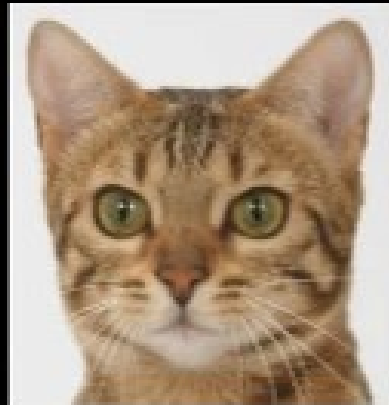
2016 Bengal Breed Seminar

Head (continued)

Ears.....

6 points

Correct



Incorrect (top cat)



Correct (bottom cat)

Incorrect



Medium to small, relatively short, with wide base and rounded tops. Set as much on side as top of head, following the contour of the face in the frontal view, and pointing forward in the profile view. Light horizontal furnishings acceptable; but lynx tipping undesirable.

2016 Bengal Breed Seminar

Head (continued)

Ears..... 6 points

Correct



Incorrect



Medium to small, relatively short, with wide base and rounded tops. Set as much on side as top of head, following the contour of the face in the frontal view, and pointing forward in the profile view. Light horizontal furnishings acceptable; but lynx tipping undesirable.

2016 Bengal Breed Seminar

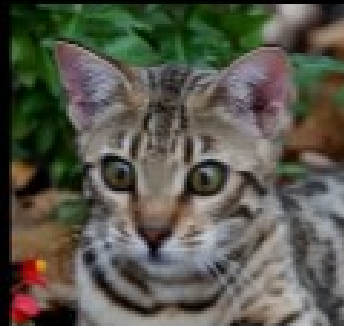
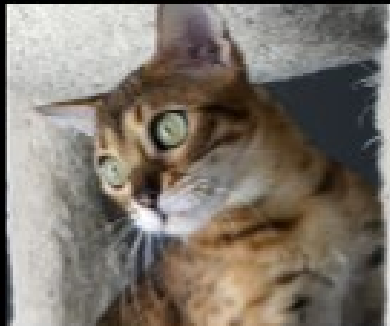
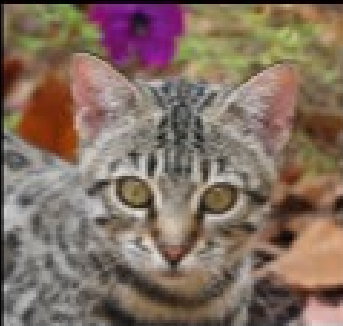
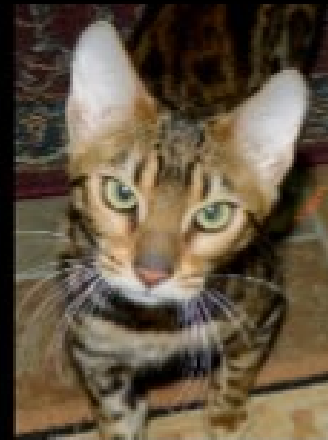
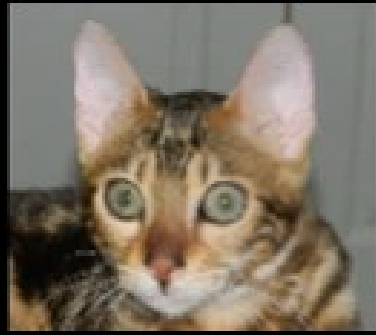
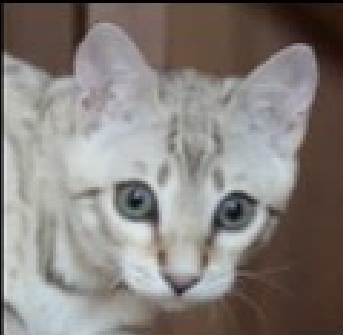
Head (continued)

Eyes.....

5 points

Incorrect

Correct



Oval, almost round. Large, but not bugged. Set wide apart, back into face, and on slight bias toward base of ear. Eye color independent of coat color except in the lynx points. The more richness and depth of color the better.

Incorrect are too almond shaped , almost hooded and too small.

2016 Bengal Breed Seminar

Head (continued)

Chin..... 3 points

Correct



Incorrect



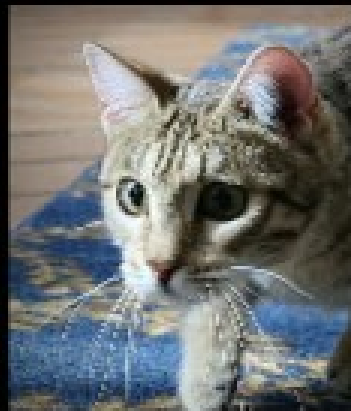
Strong chin, aligns with tip of nose in profile.

2016 Bengal Breed Seminar

Head (continued)

Muzzle.....3 points

Correct



Incorrect



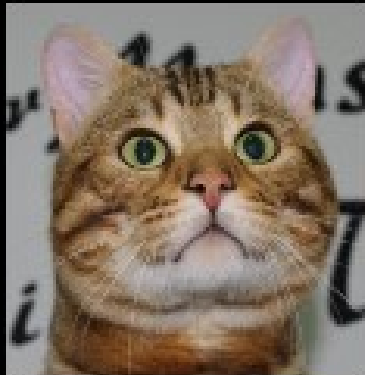
Full and broad, with large, prominent whisker pads and high, pronounced cheekbones. Slight muzzle break at the whisker pads.

2016 Bengal Breed Seminar

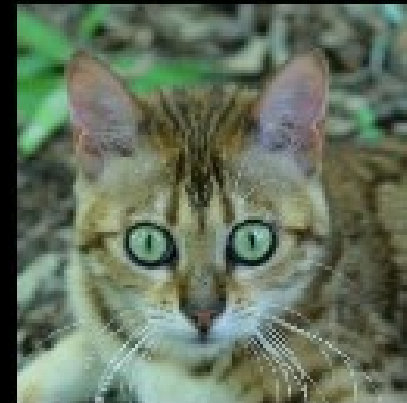
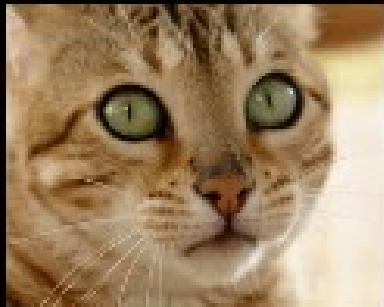
Head (continued)

Nose.....3 points

Correct



Incorrect



Large and wide; slightly puffed nose leather.

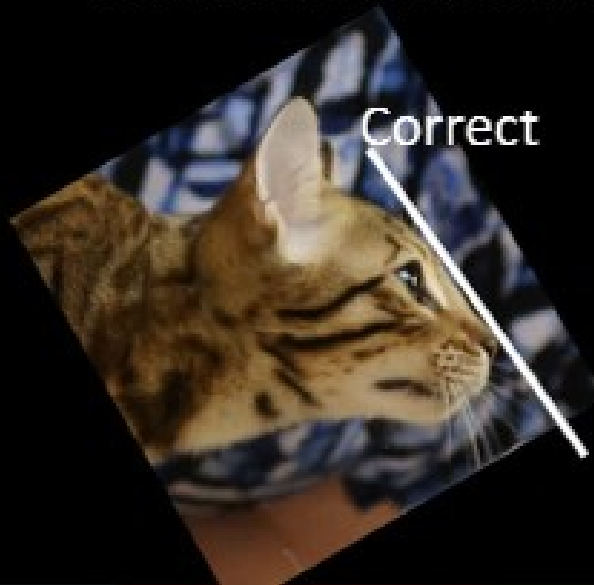
Incorrect noses too small in proportion to face & eyes and too narrow.

2010 Bengal Breed Seminar

Head (continued)

Profile.....6 points

Incorrect



Convex
→



THE LINE OF THE BRIDGE
EXTENDS TO THE NOSE TIP,
MAKING A VERY SLIGHT,
TO NEARLY STRAIGHT,
CONCAVE CURVE



THE LINE OF THE BRIDGE EXTENDS TO THE
NOSE TIP, MAKING A VERY SLIGHT, TO NEARLY
STRAIGHT, CONCAVE CURVE
THIS IS FAR MORE OF A DIP THAN NEARLY STRAIGHT



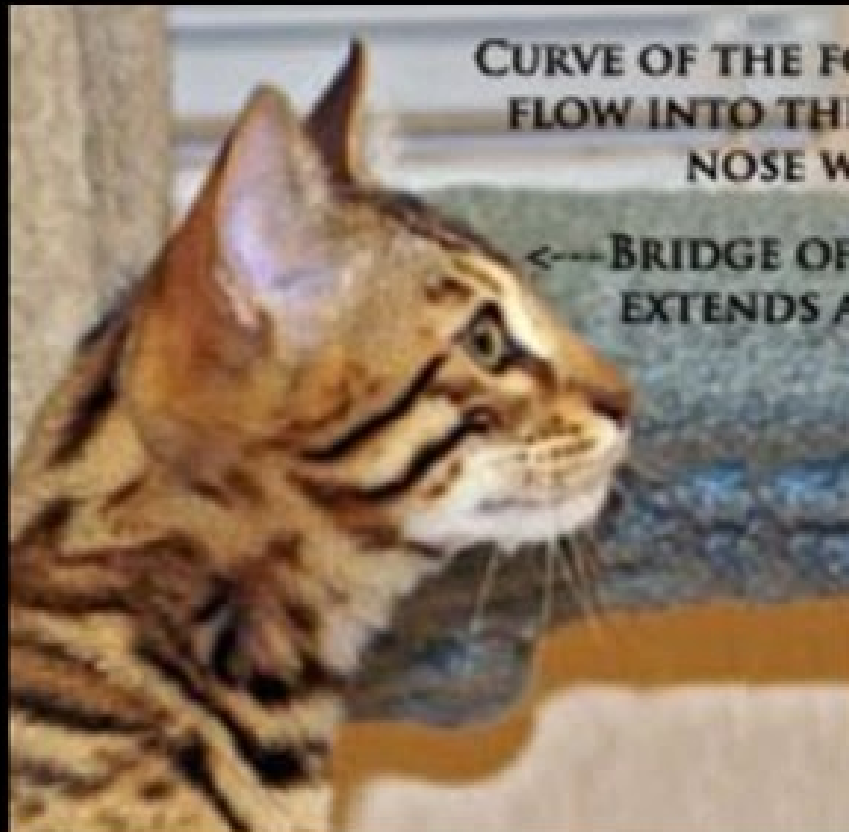
2016 Bengal Breed Seminar

Head (continued)

Profile.....6 points

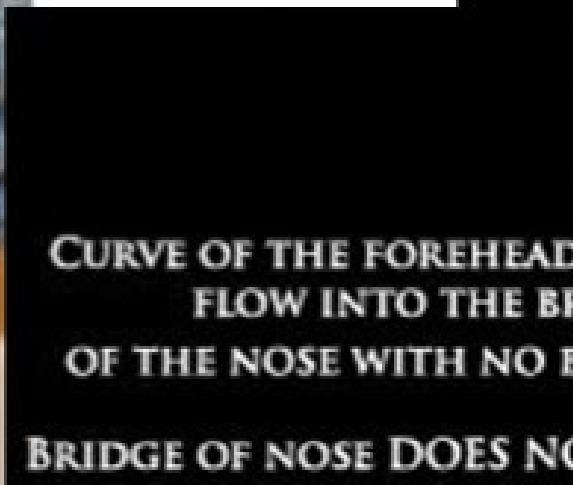
Correct

Incorrect



**CURVE OF THE FOREHEAD SHOULD
FLOW INTO THE BRIDGE OF THE
NOSE WITH NO BREAK**

**<--- BRIDGE OF NOSE
EXTENDS ABOVE THE EYES;**



**CURVE OF THE FOREHEAD DOES NOT
FLOW INTO THE BRIDGE
OF THE NOSE WITH NO BREAK ----->**

**BRIDGE OF NOSE DOES NOT ----->
EXTEND ABOVE THE EYES**



Some have noted straight and convex profiles on the Asian Leopard Cat *Prionailurus bengalensis*. The Bengal Cat is not supposed to be a replica of the Asian Leopard Cat. See slides 7 & 8.

2016 Bengal Breed Seminar

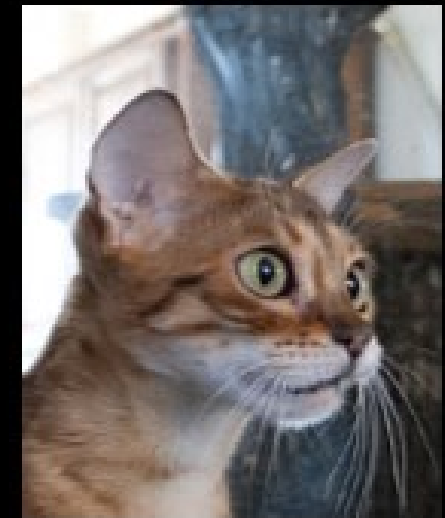
Head

Profile.....6 points

Correct



Incorrect



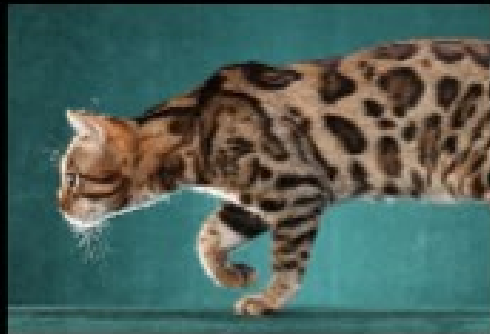
Curve of the forehead should flow into the bridge of the nose with no break. Bridge of nose extends above the eyes; the line of the bridge extends to the nose tip, making a very slight, to nearly straight, concave curve.

2016 Bengal Breed Seminar

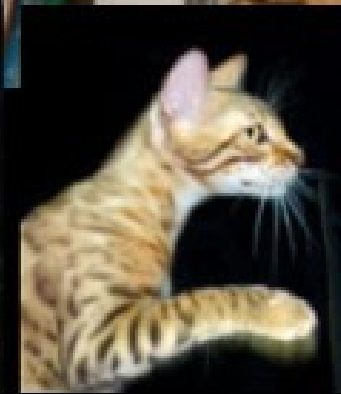
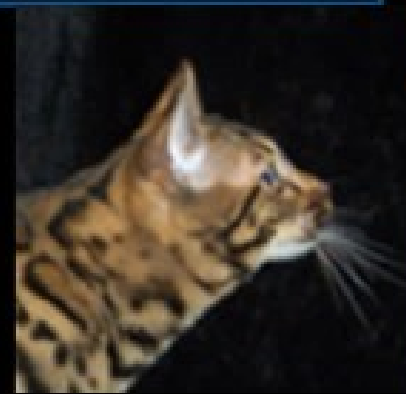
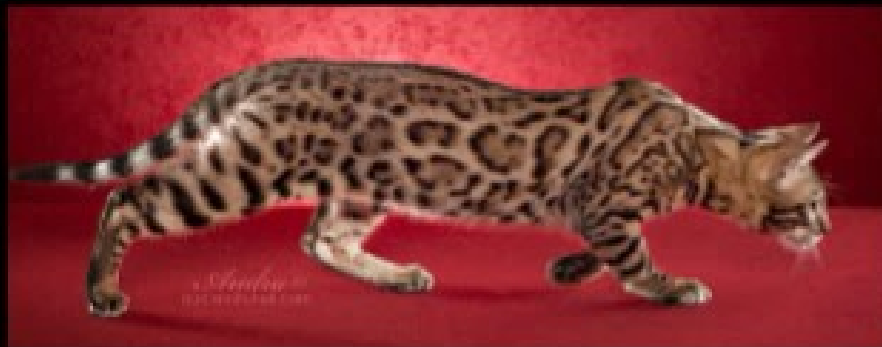
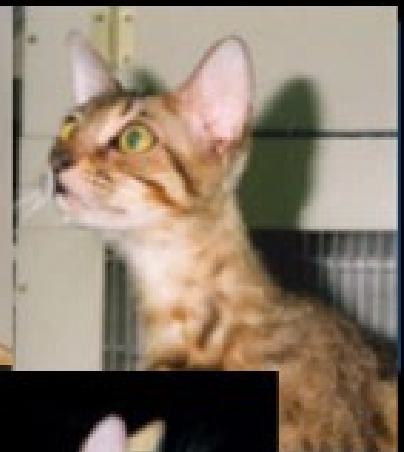
Head

Neck.....3 points

Correct



Incorrect



Neck: Long, substantial, muscular; in proportion to the head and body.

2016 Bengal Breed Seminar

Body

Body.....30 points



Torso	5
Legs	4
Feet	4
Tail	5
Boning	6
Musculature	6



2016 Bengal Breed Seminar

Body

Torso.....5 points

Correct

Incorrect



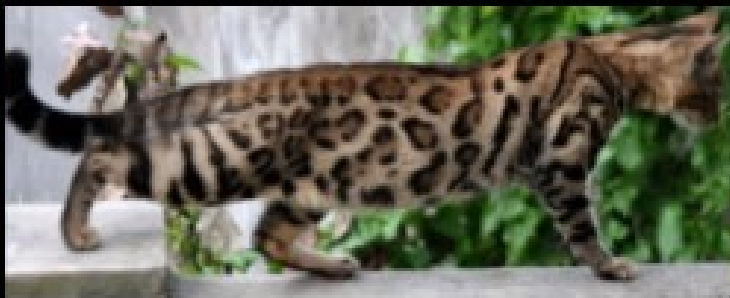
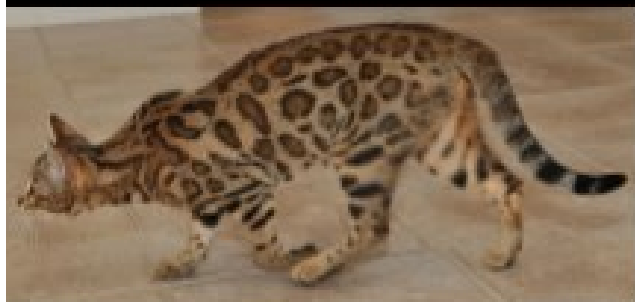
Torso: Long and substantial, not oriental or foreign. Medium to large (but not quite as large as the largest domestic breed).

2016 Bengal Breed Seminar

Body

Legs.....4 points

Incorrect



Medium length, slightly longer in the back than in the front.

2016 Bengal Breed Seminar

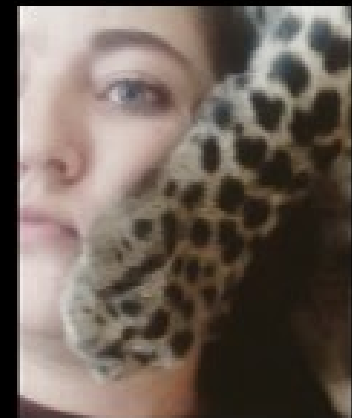
BODY (continued)

Feet.....4 points

Correct



Incorrect



Large, round, with prominent knuckles
Incorrect **is too large but has lovely spots!**

2010 Bengal Breed Seminar

BODY (continued)

Tail.....5 points

Correct

Incorrect



Medium length, thick, tapered at end with rounded tip.

Incorrect: Too narrow & tapering and too long & thin

2016 Bengal Breed Seminar

BODY

Boning.....6 points

Correct



Incorrect



Sturdy, firm; never delicate.

2016 Bengal Breed Seminar

BODY

Musculature.....6 points

Correct

Incorrect



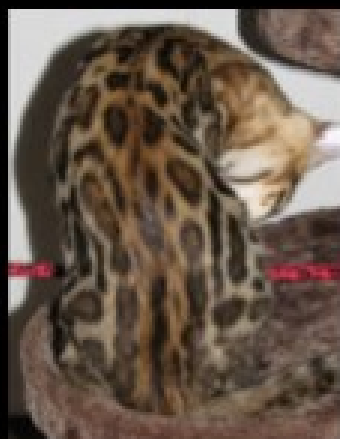
Very muscular, especially in the males, one of the most distinguishing features.

2010 Bengal Breed Seminar

Coat/Color/Pattern

Color..... 10 points

Brown Tabby



All variations of brown are allowed. Markings various shades of brown to black. Light spectacles encircling the eyes and a virtually white ground color on the whisker pads, chin, chest, belly and inner legs is desirable.

2016 Bengal Breed Seminar

Coat/Color/Pattern

Color..... 10 points

Brown Tabby



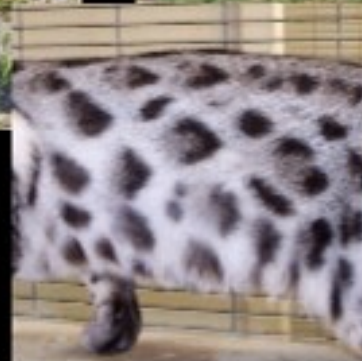
All variations of brown are allowed. Markings various shades of brown to black. Light spectacles encircling the eyes and a virtually white ground color on the whisker pads, chin, chest, belly and inner legs is desirable.

2016 Bengal Breed Seminar

Coat/Color/Pattern

Color..... 10 points

Black Silver Tabby



Silver Spotted/Marble Tabby

2016 Bengal Breed Seminar

Coat/Color/Pattern

Color..... 10 points

The 'Snow' Leopard colors



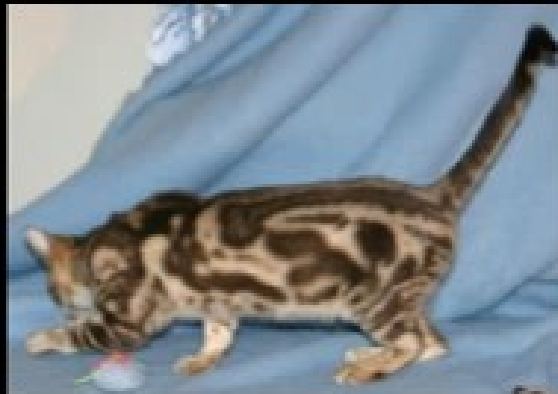
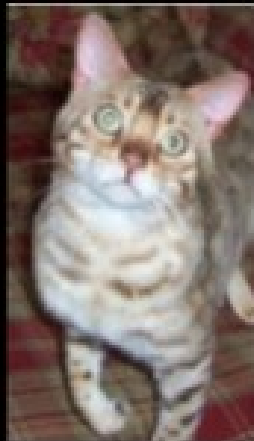
Here we have a group of the various albino series colors, the Seal Lynx Points at 6 o'clock and 8 o'clock. Seal mink at 12 o'clock , 10 o'clock and 1 o'clock. Seal Sepia at 3 o'clock.

2016 Bengal Breed Seminar

Coat/Color/Pattern

Color..... 10 points

Seal Sepia Tabby



Pattern can be various shades of brown. There should be very little or no difference between the color of the body (pattern) markings and point color.

2016 Bengal Breed Seminar

Coat/Color/Pattern

Color..... 10 points



Seal Mink Tabby



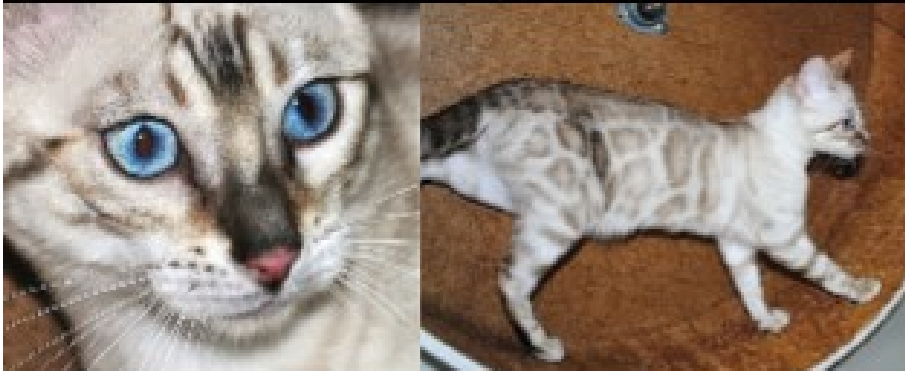
Pattern can be various shades of brown. There should be very little or no difference between the color of the body (pattern) markings and point color.

2010 Bengal Breed Seminar

Coat/Color/Pattern

Color..... 10 points

Seal Lynx Point



Incorrect



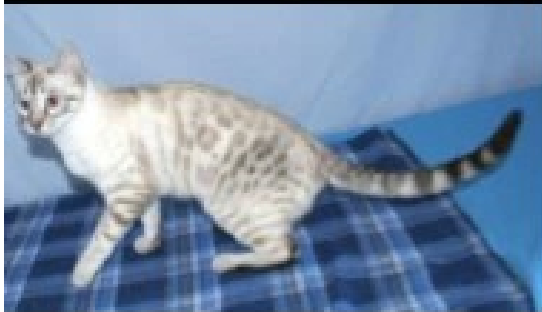
Pattern can be various shades of brown. There should be very little or no difference between the color of the body (pattern) markings and point color.

2016 Bengal Breed Seminar

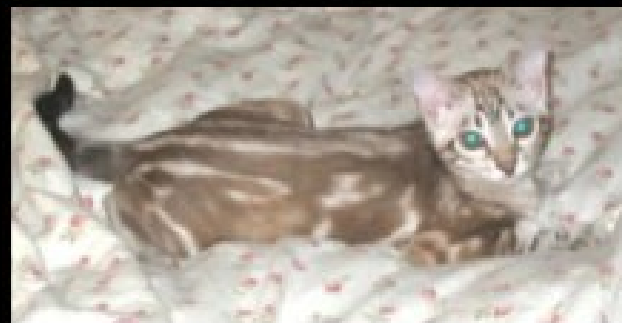
Coat/Color/Pattern

Color..... 10 points

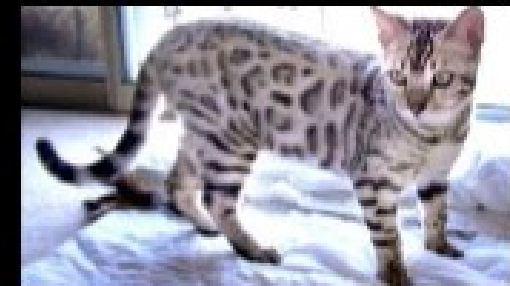
Silver 'Snows'



Silver Seal Lynx Point



Silver Seal Mink



Silver Seal Sepia

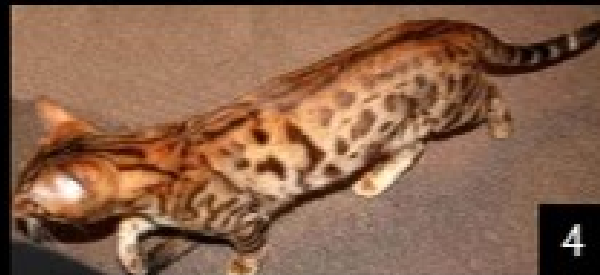
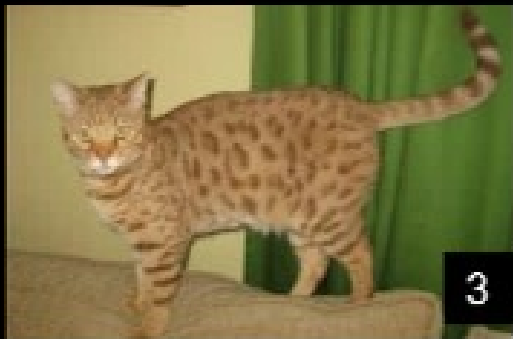
Pattern can be various shades of brown. There should be very little or no difference between the color of the body (pattern) markings and point color.

2016 Bengal Breed Seminar

Coat/Color/Pattern

Color..... 10 points

Incorrect Colors



Some examples of Incorrect colors that are in the gene pool.

1.Solid 2.Dilute (Blue) 3. Cinnamon 4. Chocolate 5. 01 Red

2016 Bengal Breed Seminar

Coat/Color/Pattern

Texture..... 10 points

Correct



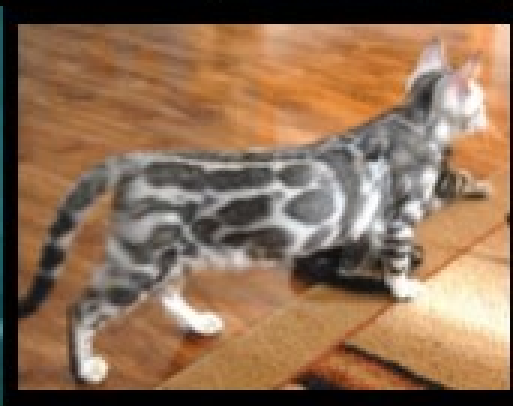
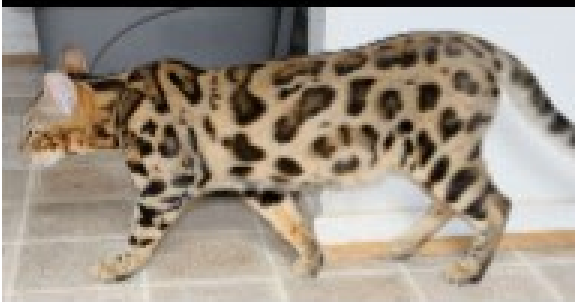
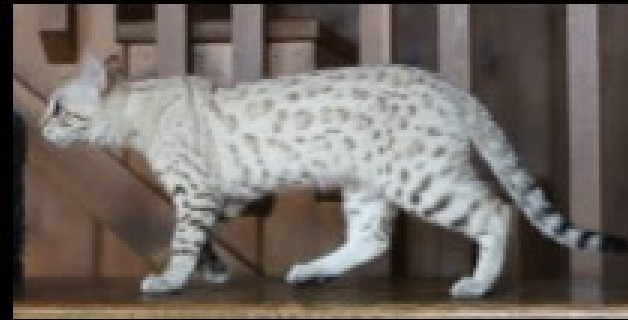
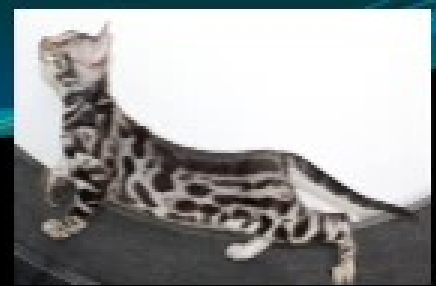
Incorrect



Dense and luxurious, close-lying, unusually soft and silky to the touch.

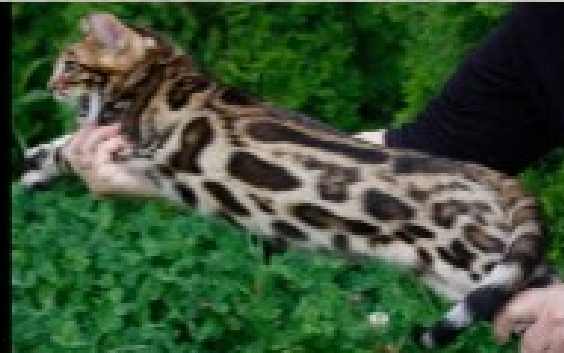
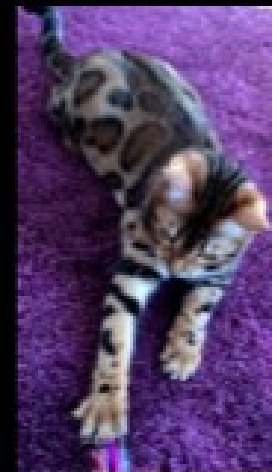
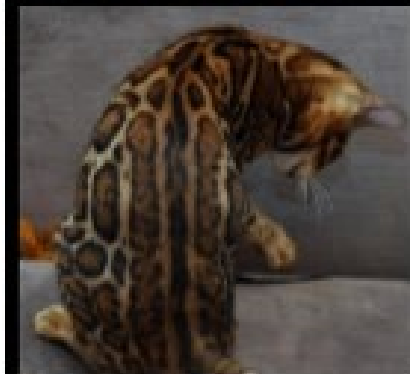
2016 Bengal Breed Seminar

Pattern (Spotted).....15



Spots shall be random, or aligned horizontally.

2016 Bengal Breed Seminar Pattern (Spotted).....15



Rosettes showing two distinct colors or shades, such as pawprint shaped, arrowhead shaped, doughnut or half-doughnut shaped or clustered are preferred to single spotting but not required

2016 Bengal Breed Seminar

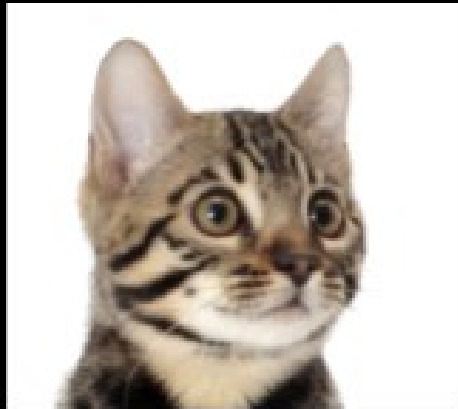
Pattern (Spotted).....15



Contrast with ground color must be extreme, giving distinct pattern and sharp edges.

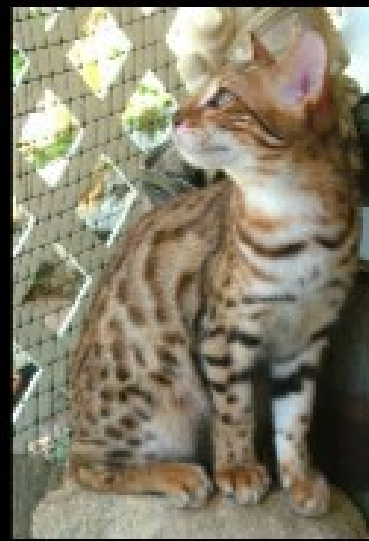
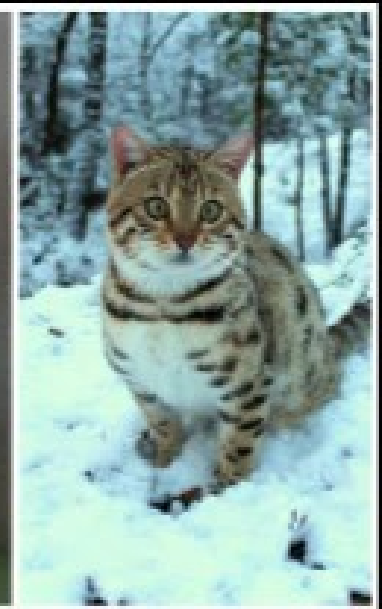
2016 Bengal Breed Seminar

Pattern (Spotted).....15



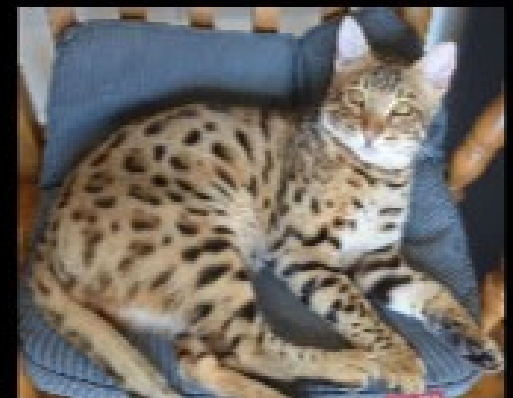
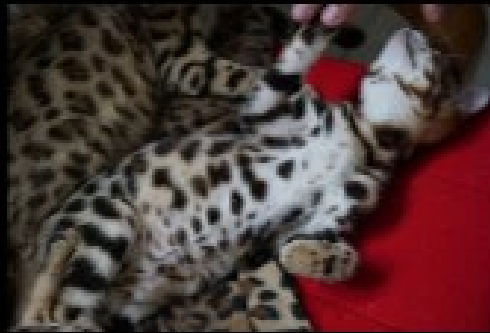
Strong, bold chin strap and mascara markings desirable.

2016 Bengal Breed Seminar Pattern (Spotted).....15



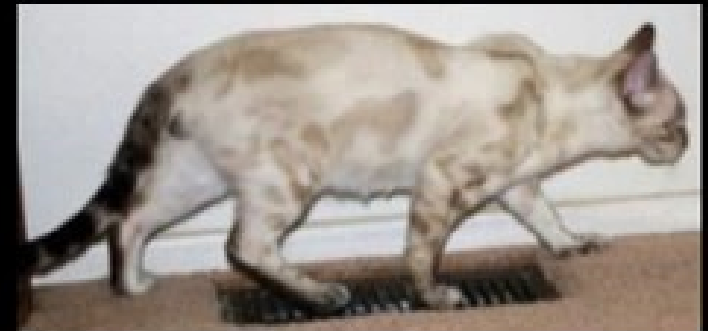
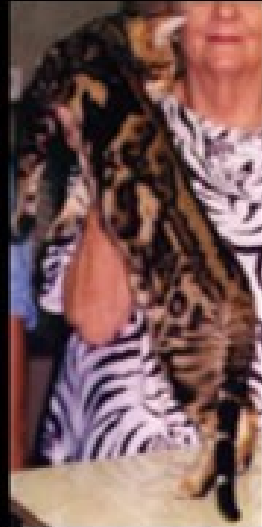
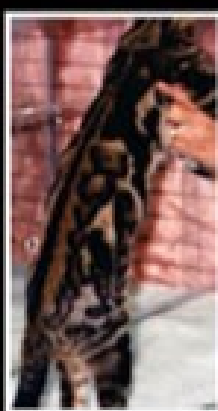
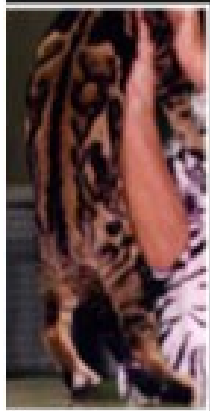
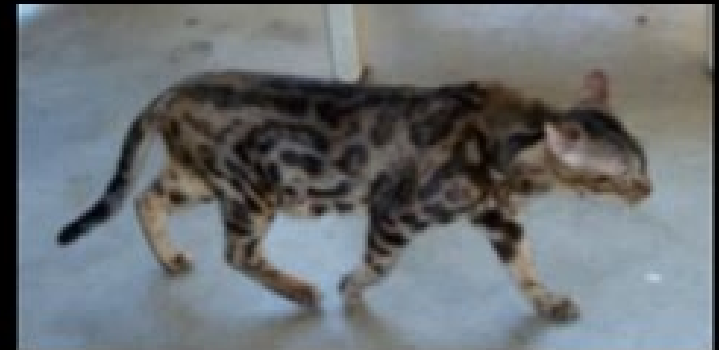
Virtually white undersides and belly desirable.

2016 Bengal Breed Seminar Pattern (Spotted).....15



Blotchy horizontal shoulder streaks, spotted legs and spotted or rosetted tail are desirable.
Belly must be spotted.

2016 Bengal Breed Seminar Pattern (Marbled).....15



Markings, while derived from the classic tabby gene, should be uniquely different with as little "bull's-eye" similarity as possible. Belly must be patterned.

2016 Bengal Breed Seminar

Pattern (Marbled).....15



Pattern should, instead, be random, giving the impression of marble, preferably with a horizontal flow when the cat is stretched. Vertical striped mackerel influence is undesirable.

2016 Bengal Breed Seminar Pattern (Marbled).....15



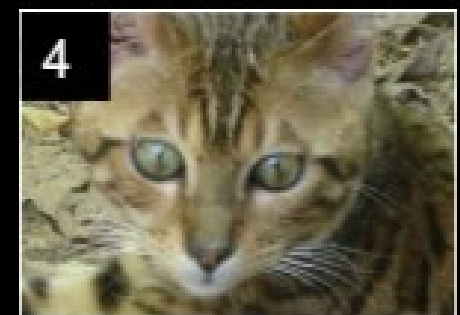
Preference should be given to cats with three or more shades; i.e., ground color, markings, and dark outlining of those markings.

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Allowances



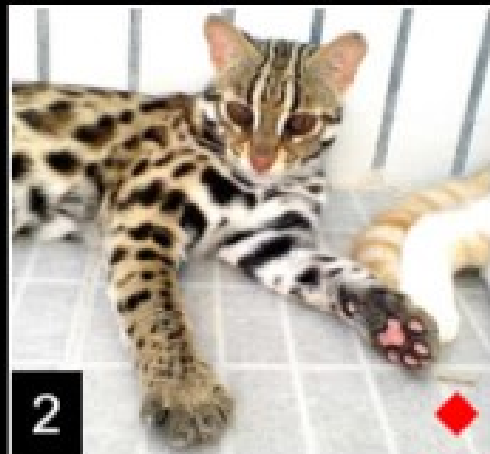
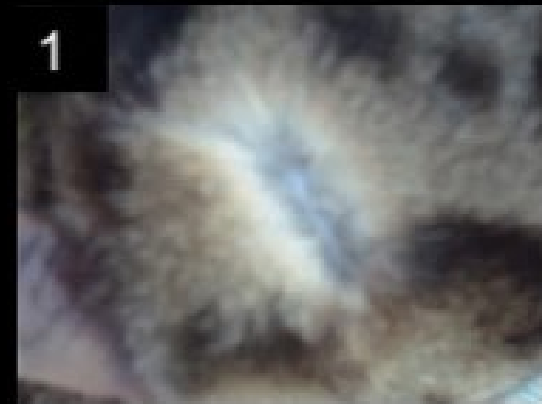
1. Smaller size, in balanced proportion, of females.
2. Slightly longer coat in kittens.
3. Jowls in adult males.
4. Eyes slightly almond shaped.



2016 Bengal Breed Seminar



Allowances



1. Mousy undercoat.
2. Paw pads not consistent with color group description.

◆ Asian Leopard Cat

2016 Bengal Breed Seminar

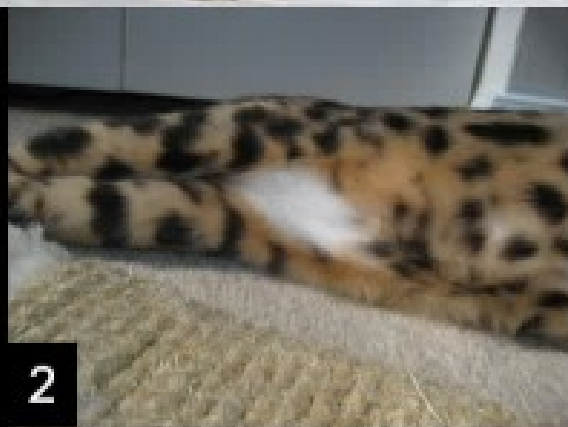
Penalize



1. Spots on body running together vertically forming a mackerel tabby pattern on spotted cats;
2. circular bulls-eye pattern on marbled cats;

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Penalize and Withhold All Awards



1. Substantially darker point color (as compared to color of body markings) in Seal Sepia, Seal Mink, or Seal Lynx Point cats.
2. Any distinct locket on the neck, chest, abdomen or any other area.

WITHHOLD ALL AWARDS: Belly Not Patterned

2016 Bengal Breed Seminar

Handling & Temperament



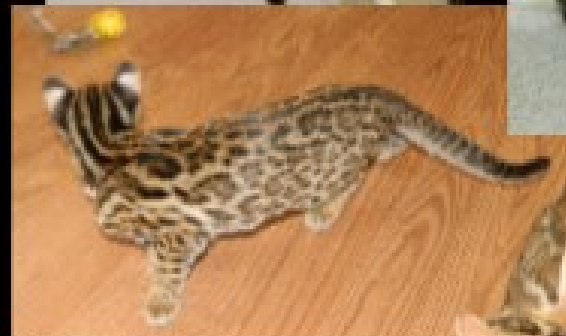
Bengals revolutionized TICA by being the first breed to include the statement *“Temperament must be unchallenging; any sign of definite challenge shall disqualify. The cat may exhibit fear, seek to flee, or generally complain aloud but may not threaten to harm”*, now included on all TICA standards. Bengal Cat breeders have demonstrated through painstaking selection that confident, relaxed and affectionate natures are inherited and may be increased or diminished through breeding choices.

Enthusiasts and Evaluators of Bengal Cats do justice by the Bengal Cat breed when timid, anxious and unaffectionate cats are removed from the breeding population and not rewarded with titles.

Handling a Bengal Cat requires no specialized training, instruction or demeanor than handling any domestic cat in a given situation. All cats respond to respectful caress, confident movement and minimal restraint.

2016 Bengal Breed Seminar

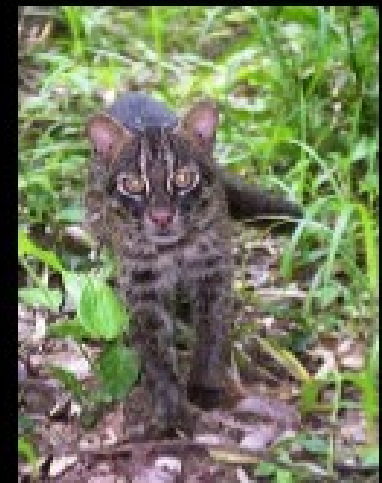
Bengal Heritage - The Asian Leopard Cat (*Prionailurus bengalensis*)



- Small wild cat species, from 5-15 lbs. living in Asia from the Amur region south to Indonesia, from Philippines west to Pakistan.
- Highly adaptable feline, living in tropical to temperate climates
- Noted and named for the striking, high contrast spotted coat of most subspecies that makes the cat resemble a smaller version of the Leopard (*Panthera pardus*)
- One subspecies is endangered though, this feline is among the most common of all Asian wild cats
- The Asian Leopard Cat is noted for being shy, easily frightened and retiring though it frequently lives near human settlements

2016 Bengal Breed Seminar

Asian Leopard Cat (*Prionailurus bengalensis*) Variation



In 2016 all of these cats are considered the single species Asian Leopard Cats, *Prionailurus bengalensis* and represent distinct, often geographically distinctive subspecies. However, taxonomists (scientists specializing in classifying species), geneticists and zoologist continue to debate this fact. As recently as 2000 they were classified as four (4) distinctive species – The Asian Leopard Cat, Amur Leopard Cat, Tsushima Cat and Irimote Cat.

Recent genetic studies by Texas A & M has revealed:

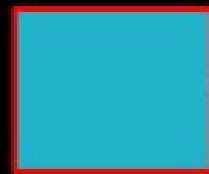
- Southern Leopard Cat is more related and has had species introgression with Fishing Cats.
- Leopard Cats on the Indonesia Isles are more distinct genetically than other Leopard Cats
- The Tsushima, Irimote and Amur Leopard Cats are more closely related to one another than to other Asian Leopard Cats

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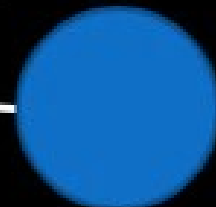
Bengal Cat Breeding Strategy Paradigm

TICA
registration
codes

00S

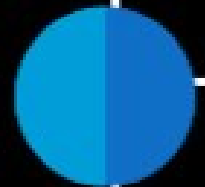


Asian Leopard Cat



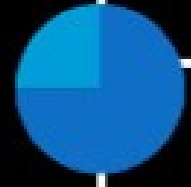
Domestic Cat – *Felis sylvestris* derived

F1



F1 or 1G

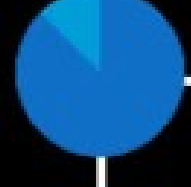
Domestic Cat – *Felis sylvestris* derived



Second generation domestic backcross

or **2G**

Domestic Cat – *Felis sylvestris* derived

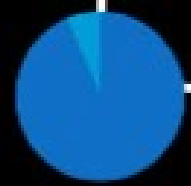


Third generation domestic backcross

or **3G**

Domestic Cat – *Felis sylvestris* derived

SBT



Domestic Cat

or **4G**

Use the terms second generation domestic backcross and third generation domestic backcross and NOT F2 & F3. In **ALL FIELDS OF SCIENCE** F2 generations are the result of F1 X F1 and F3 the result of F2 X F2. Incorrect terminology has caused scientific bodies and law enforcement agencies to disbelieve that Bengal Cats are domestic cats resulting in harmful policies and regulations

2016 Bengal Breed Seminar

Bengal Cat Heritage – Domestic Cats



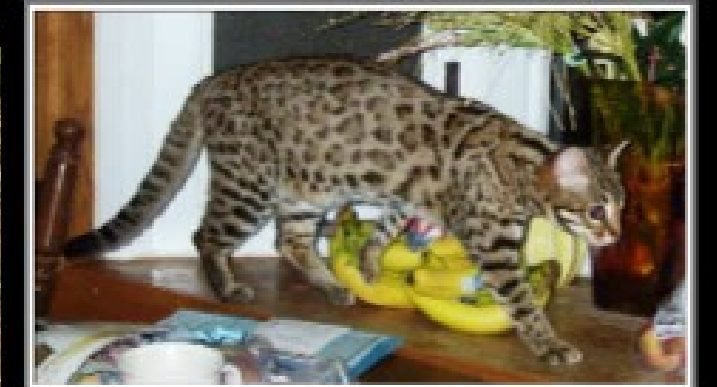
Domestic Cats of many breeds were used as outcrosses throughout the breed's history for temperament and special attributes.

1. Indian Mau (Millwood Tory of Delhi) – glitter, green eyes and bloodline
2. Egyptian Mau – mackerel spotting, silver, “solid” black, green eyes
3. Ocicat – genetic diversity, robust size, dilute colors, classic tabby pattern & lynx point
4. Abyssinian – rufousing, increased ticking
5. Burmese – sepia and mink albino series genes
6. American Shorthair – silver, heavy boning and musculature, increased bull's eye classic & mackerel
7. Domestic Shorthair – good temperament, genetic diversity, long hair, mackerel and classic tabby & ?

2016 Bengal Breed Seminar



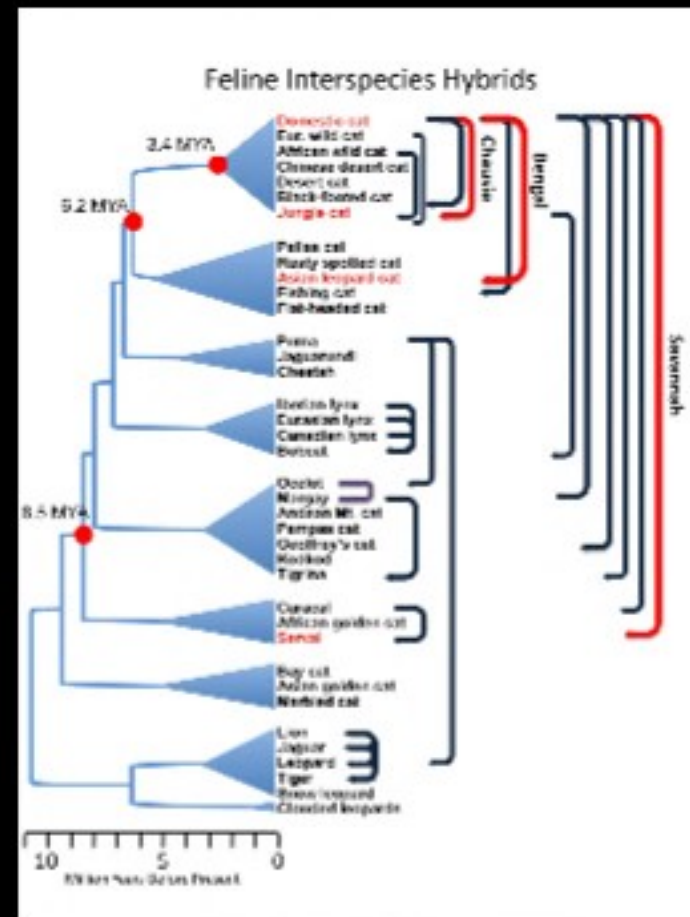
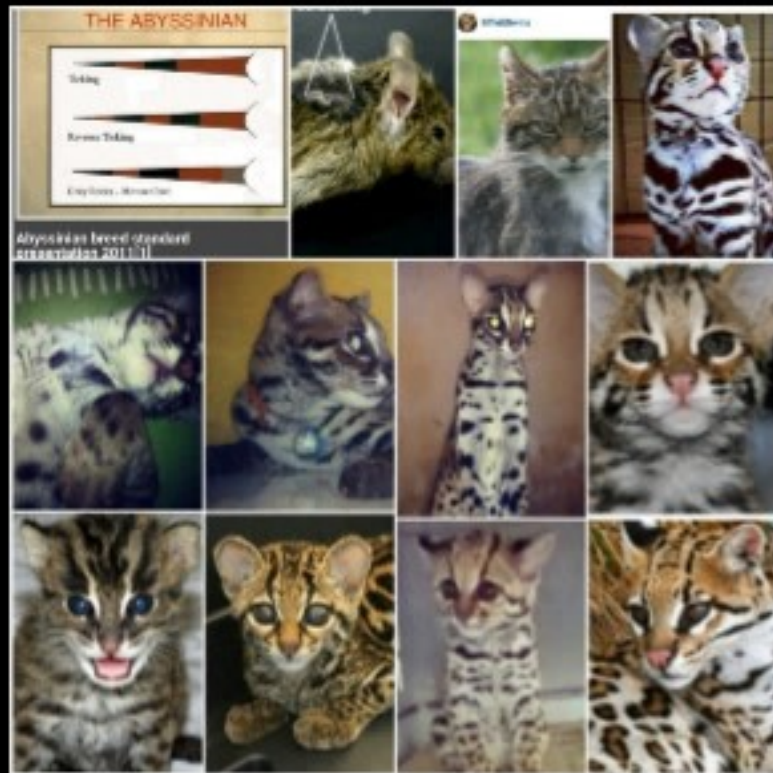
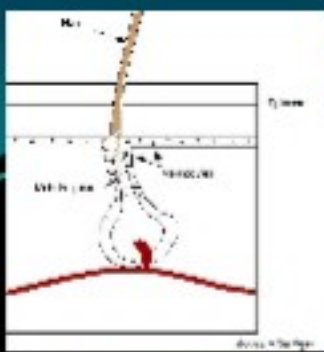
Foundations – F 1



- The Bengal Cat is derived from hybrids between the Asian Leopard Cat (*Prionailurus bengalensis*) and domestic cats . These cats are considered “Foundation Bengals” and are not eligible showing.
- First generation (or A1S), Second generation domestic backcrosses and third generation domestic backcrosses males are generally sterile and only females may be used in breeding programs.
- Foundation Bengals may require more specialized care
- **Bengal Cat** refers to SBT (studbook) registered Bengals at least three generations removed from the F1 hybrid

2016 Bengal Breed Seminar

Understanding Agouti - Briefly



William Murphy PhD slide, 2014

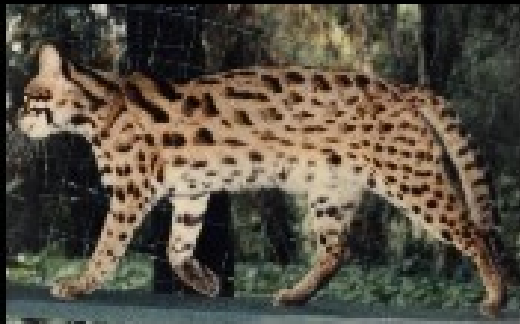
Recent genetic analysis has discovered several cat species have evolved unique ASIP, Agouti Signaling Protein, this protein signals to each hair on a cat's body to produce pigment alternating pigment or no pigment at all in a specific manner and to create an overall marking pattern. Closely related species that have melanistic forms have developed unique ASIP to create the same phenotype – a melanistic cat.



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Understanding Agouti - Briefly

Asian Leopard Cat *Prionailurus bengalensis*



Wild Cat *Felis sylvestris (lybica & sylvestris)*



- All domestic cat color and pattern (pigment distribution and arrangement) is based on *Felis sylvestris* ASIP – the gene telling each hair when to produce the alternating bands of black & yellow pigment. Identified as A or a
- Asian Leopard Cats have their own ASIP – Apb or A2, instructing that species on pigment distributions and arrangement in each hair.
- Notice the amount of black pigment in each species and what parts of the body are the darkest. Can you visually see a degree of difference in the amount pigment variation (lightest and darkest hairs in each species)? That is the morphological/phenotypical difference in their ASIP.

2016 Bengal Breed Seminar

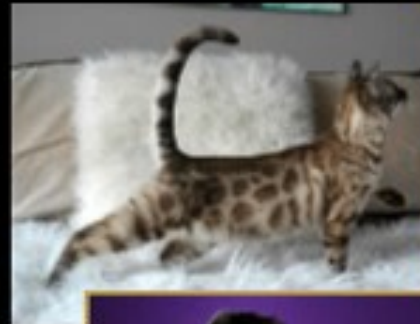
Apb – Agouti *Prionailurus bengalensis*



Charcoal is produced when there is a DISCORDANCE in the agouti signal – different “instructions” for the cat’s pigment producing mechanism. One copy of the Apb ASIP (to create A LOT of black pigment and pigment alternation like an ALC) and one copy of the *Felis sylvestris* ASIP a (to create *Felis sylvestris* amounts of black and pigment alternation)

Charcoal can also be produced when a cat inherits Apb/Apb or Apb/A2 ASIP. These cats lack the dark cap and dark cape, some lack the dark mask!

Asian Leopard Cat *Prionailurus bengalensis* Apb/Apb



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ASIP Discordance



ANIMAL GENETICS
Journal of the International Cat Association

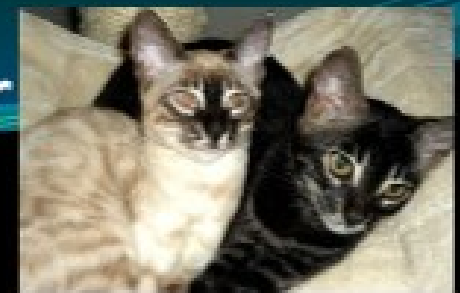
Open Access Creative Commons

Short Communication

Who's behind that mask and cape? The Asian leopard cat's Agouti (ASIP) allele likely affects coat colour phenotype in the Bengal cat breed

J. S. Savitsky, M. C. L. Henkel, B. W. Gels, W. J. Murphy, C. B. Hays, A. Lyons

First published: 26 August 2014 | <http://dx.doi.org/10.1186/1029-2762-14-10>



Charcoal Seal Lynx and Brown Charcoal siblings



Left to right, Seal Mink spotted, Charcoal Seal Mink Spotted and "Solid" Seal Mink spotted littermates

These two cats are littermates produced from a melanistic Jaguar father and lion mother. The dark cat is phenotypically similar in coloration to a charcoal Bengal. Because the Lion and Jaguar are likely to have an ASIP unique to their species, there was discordance in the amount of black pigment to be produced, creating the charcoal looking animal. It is not a true melanistic animal but not fully colored either.



CHARCOAL BENGAL

SPOTTED PATTERNS ROSETTED MARBLED

NON-AGOUTI BENGAL PATTERNS

CONVENTIONAL TABBY FACE MARKINGS

CHARCOAL IS PRODUCED BY THE COMBINATION OF A DOMESTIC CAT NON-AGOUTI GENE AND AN ASIAN LEOPARD CAT AGOUTI GENE

SPOTTED PATTERNS ROSETTED MARBLED

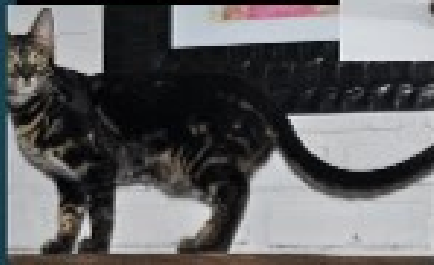
CHARCOAL BENGALS HAVE LITTLE OR NO BLUISHING AND ARE DARKER AND GREYER THAN OTHER BENGALS. THEY ARE GREY-TONED RATHER THAN COYUM BROWN-TONED. THEY TYPICALLY HAVE A "ZORRO" MASK AND A CAPE (WIDE DARK DORSAL REGION).

CHARCOAL BENGAL FACE MARKINGS "ZORRO MASK"

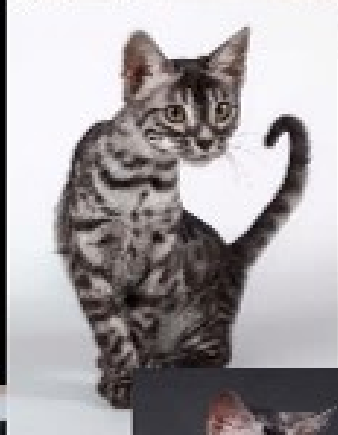
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Charcoal in existing Championship Bengal Cat Colors & Patterns

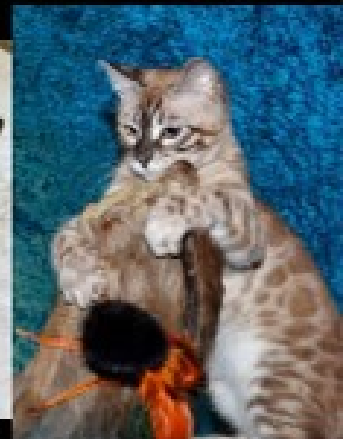
Brown (black) Tabby



Black Silver Tabby

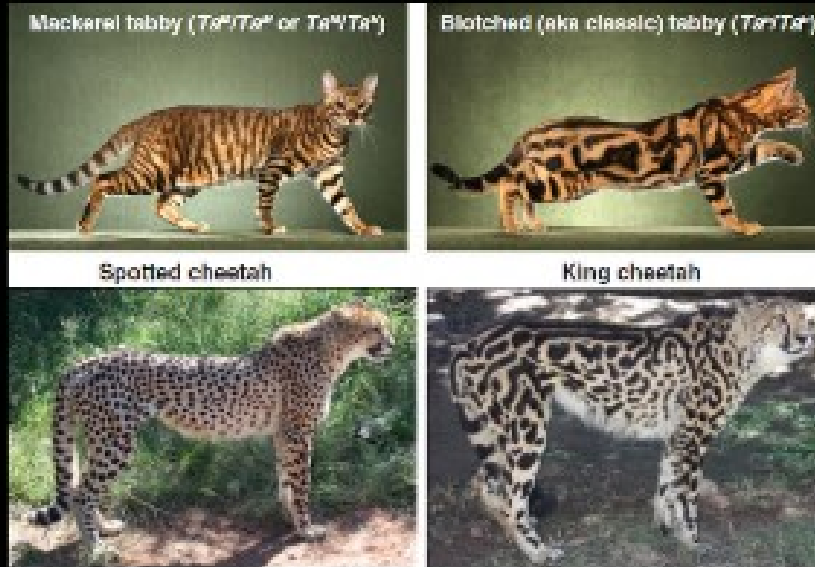


Seal Albino Series Tabby



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Bengal Cat Community & Science



Specifying and Sustaining Pigmentation Patterns in Domestic and Wild Cats
 Christopher B. Kaelin et al.
 Science 337, 1536 (2012);
 DOI: 10.1126/science.1220893

Specifying and Sustaining Pigmentation Patterns in Domestic and Wild Cats

Christopher B. Kaelin,^{1,2,4} Xiao Fu,^{3,4*} Louis Z. Haug,² Victor A. Davis,² Kelly A. McGowan,² Anne Schmidt-Küntzel,^{1,2} Melody E. Kordic,^{1,2} Javier Pina,² Juan Pontas,^{1,2} Gregory M. Cooper,² Homogeno Barud,² William F. Swanson,² Laurin Marka,¹ Cindy K. Harper,² Ann van Dyk,^{2,3} Dong Yoo,² James L. Mullikin,^{1,2} Wesley C. Warren,^{1,2} Eduardo Estebn,^{1,2,4} Lidia Roa,² Stephen J. O'Brien,^{2,†} Gregory S. Barsh,^{1,2,†} Marjane Mesott-Raymond²



Molecular and Cellular Probes
 Volume 26, Issue 6, December 2012, Pages 224-231
 Animal DNA Diagnostics

Genetic testing in domestic cats

Leslie A. Lyons

[View more](#)

Journal of Veterinary Cardiology
 Volume 17, Supplement 1, December 2015, Pages S282-S296
 Supplement Issue: [View the full text](#)

Reference intervals and allometric scaling of echocardiographic measurements in Bengal cats

Tabitha Scoville, DVM, MS , Kyle J. Wiggins, DVM

MOLECULAR BIOLOGY AND EVOLUTION

Mechanisms Underlying Mammalian Hybrid Sterility in Two Feline Interspecific Models

Markus Beck,^{1,2} Delia Ripstein,^{1,2} Andrew Rodman,^{1,2} Zengli Wang,^{1,2} and Gregory S. Barsh,^{1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100}

Phylogenomic evidence for ancient hybridization in the genomes of living cats (Felidae)

Lang et al., [Genome Research](#), 2015

The Bengal Cat community has been actively engaged with the scientific community since the very beginning. Many Bengal Cats have been part of the research to improve understanding, increase appreciation and innovate selection in cats, mammals and all life. **They should be applauded.**

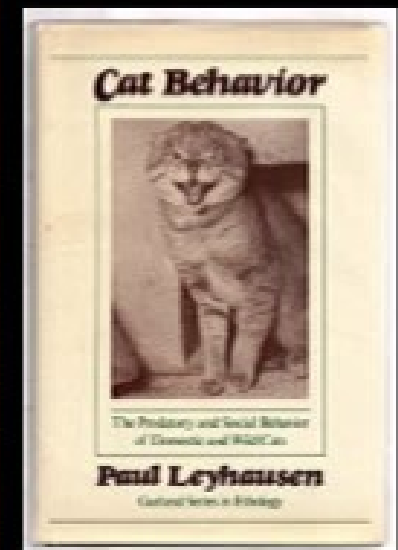
2016 Bengal Breed Seminar

A Brief History

- The first Asian Leopard Cat documented by Western Europeans (Kerr, 1792) was captured swimming in the Bay of Bengal (hence the Latin name). That cat was taken back to camp and was bred to Kerr's domestic cat resulting in the first documented hybrids
- 1871 Crystal Palace Cat show featured F1 Asian Leopard Cat X domestic hybrids shown as "Hybrids"
- Paul Leyhausen hybridized Leopard Cat X domestic at Germany's Max Plank Institute 1945-1960. Dr. Leyhausen created F1 X domestic backcross (2nd generation). Leyhausen theorized the Siamese Cat descended from ALC crosses based on non-African Wild Cat confirmation and ALC-like behavior and vocalizations
- Jean Mill was the first to cross a domestic cat with an Asian Leopard Cat (*Prionailurus bengalensis*) in the US, 1963.
- Asian Leopard Cat X Domestic Cat hybrids were shown in CFA and ACFA during the 1970s
- Jean Mill's effort was a departure and success because of:
 - Emphasis on creating a domestic cat NOT hybrid
 - Anti-Pyramid Plans – Encourage Collaboration, Encourage Passion focus, Emphasis on Collective Accomplishment, Di
 - Model and Encourage unrestrictive contracts
- Bengals show in Championship in TICA, GCCF, FIFE, ACFA, CFA (2017/2018?) as well as Australian & South African Cat Fancy Organizations



Jean Sugden (Mill) & first F1 Kinkin, 1963

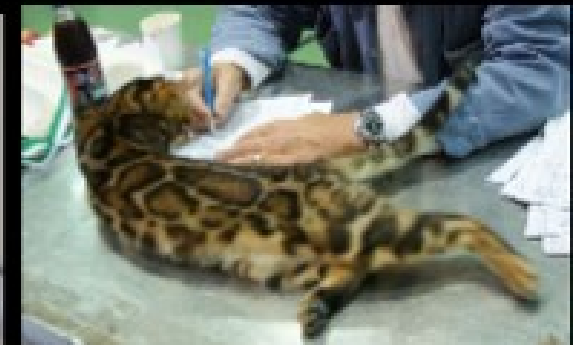


1700 Mughal Woman chases Leopard Cat, Harvard Library, Showing Human Interaction w Asian Leopard Cat 77

2010 Bengal Breed Seminar

The Bengal in TICA

- First Bengal registered with TICA , shortly after TICA's inception in 1982 – An F1 previously shown in ACFA
- 1986 Jean Mill registered 33 "Leopardettes" of her breeding with TICA
- Bengals showed in NBC for five years
- 1991 Brown Spotted Bengals become championship
- 1993 Marble pattern and Seal Lynx Point, Seal Mink & Seal Sepia colors were granted Championship
- **#1 in registrations, #1 exhibitions since 1992**
- More Bengals registered than all but 5 breeds combined (2016 Board Agenda)
- **NO Bengal has EVER been the registry's BEST Cat, Kitten or Alter**
- Jean Mill credits TICA as providing the forum for validating the breed's legitimacy internationally.
- TICA took the Bengal to the world
- **How can TICA registration, TICA show and TICA Memberships help the Bengal Cat Community breed BETTER Bengals?**



2016 Bengal Breed Seminar

What will a Show Quality look like in the future...

based on selection, finals and acceptances now? How can we make the Bengal Cat better?

